

INDEX.

| | |
|--|----|
| Statement of the case..... | 4 |
| Outline of respondents' argument..... | 5 |
| Argument | 6 |
| The patent in suit..... | 8 |
| Defendants' apparatus | 11 |
| History of Callahan patent..... | 12 |
| (A) Interferences in the Patent Office..... | 12 |
| (B) Suits elsewhere based on this patent..... | 14 |
| (C) The present suit in the Third Circuit..... | 15 |
| First defense—The claims in suit are invalid..... | 16 |
| (A) Same combination of five elements, or their equivalents, was in use before the date of Cal- lahan's alleged invention, for distributing not only concrete, but grain, coal and other ma- terials | 16 |
| Ingalls Building, Cincinnati, Ohio, 1902..... | 16 |
| Lynnhaven Hotel, Norfolk, Va., 1906..... | 20 |
| St. Louis Coliseum Building, July-October, 1908.... | 30 |
| American Theater Building, St. Louis, Mo., 1907.... | 36 |
| Tootle-Campbell Building, St. Joseph, Mo., 1908.... | 50 |
| Sumner High School, St. Louis, July, 1908..... | 51 |
| Franklin School, St. Louis, 1909..... | 52 |
| Webber Dam, near Lyons, Mich., 1906..... | 54 |
| Great Lakes Dredge & Dock Company Appara- tus, developed beginning 1906, at Garry, Ind..... | 56 |
| Track elevation | 69 |
| Grain elevators—Deposition of Wm. R. Sinks.... | 70 |
| Grain elevators—Deposition of R. H. Folwell.... | 73 |
| Grain elevators—Deposition of L. A. Stinson.... | 76 |
| Grain elevators—Deposition of C. T. Anderson.. | 79 |
| Prior patents | 80 |
| Prior publications other than patents..... | 83 |
| Majestic Theater Building, Los Angeles, 1908..... | 87 |

| | |
|--|-----|
| Healy-Tibbetts Company's Apparatus, San Francisco, 1906-1909 | 122 |
| (B) The claims in suit do not cover patentable combinations, but mere aggregations of several elements | 134 |
| (C) Combination claimed does not represent invention, but a natural evolution in the art..... | 137 |
| (D) The claims in suit represent a mere double use of apparatus previously used for many years for distributing other material..... | 143 |
| (E) The Callahan apparatus was impractical and inoperative until its inherent difficulties were overcome by changes made by others..... | 151 |
| Second defense—The claims are not infringed..... | 156 |
| Third defense—No public acquiescence..... | 170 |
| Fourth defense—The decision of the Court of Appeals for the Third Circuit should be followed, rather than that of the Sixth Circuit..... | 172 |
| Fifth defense—The plaintiffs are not entitled to equitable relief | 174 |
| Other decisions of interest..... | 177 |
| Costs | 178 |
| Conclusion | 181 |

Index of Citations.

| | |
|--|----------|
| Appleton Manuf'g. Co. v. Star Manuf'g. Co., 60 Fed. 411 | 35 |
| Barbed Wire Case, 143 U. S. 275..... | 101 |
| Brooks <i>et al.</i> v. Sacks, 81 Fed. 403..... | 35 |
| Busell Trimmer Company <i>et al.</i> v. Frank Stevens <i>et al.</i> , 34 U. S. 423..... | 136 |
| Clark Thread Co. v. Willimantic Linen Co. <i>et al.</i> 140 U. S. 481 | 35, 90 |
| Crone v. John J. Gibson Co., 237 Fed. 637..... | 35 |
| County of Fond du Lac v. Sarah May, 34 U. S. 395.... | 136 |
| Dodge Coal Storage Co. v. N. Y. Cent. & H. R. R. Co., 150 Fed. 738 | 147, 178 |
| Dunbar <i>et al.</i> v. Eastern Elevating Co. <i>et al.</i> , 81 Fed. 201 | 150 |
| Eames v. Godfrey, 68 U. S. 78..... | 160 |
| Eck v. Kutz, 132 Fed. 758..... | 168 |
| Edward Barr Co. v. New York & New Haven Auto- matic Sprinkler Co., 32 Fed. 79..... | 169 |
| Elliott v. Youngstown Co., 181 Fed. 345..... | 140, 167 |
| Holmes Electric Protective Co. v. Metropolitan Burglar Alarm Co., 33 Fed. 254..... | 149 |
| Houser <i>et al.</i> v. Starr, 203 Fed. 264..... | 149 |
| James M. Grant v. Richard Walter, 148 U. S. 544..... | 149 |
| Mallon <i>et al.</i> v. Gregg <i>et al.</i> , 137 Fed. 68..... | 140, 141 |
| Mast, Foos & Company v. Stover Manufacturing Co., 177 U. S. 485..... | 170 |
| McCaslin v. Link Belt Machinery Co. <i>et al.</i> , 139 Fed. 393 | 170 |
| McCaskey Register Co. v. Mantz, 224 F. R. 495..... | 161 |
| McCaskey Register Co. v. Divens, 194 Fed. 967..... | 164 |
| New England Motor Co. v. B. F. Sturtevant Co., 150 Fed. 131..... | 35 |

| | |
|---|-----|
| Newton <i>v.</i> Consolidated Gas Co., 265 U. S. 85; 68 L. Ed. 911 | 180 |
| New York Scaffolding Co. <i>v.</i> Liebel-Binney Construction Co., 254 U. S. 24..... | 177 |
| Pennsylvania Railroad Company <i>v.</i> Locomotive Engineering Safety Truck Co., 110 U. S. 490..... | 149 |
| Phoenix Knitting Works <i>et al.</i> <i>v.</i> Rich <i>et al.</i> , 194 Fed. 722..... | 169 |
| Ransome Concrete Machinery Co. <i>v.</i> United Concrete Machinery Co., 177 Fed. 413..... | 148 |
| Reckendorfer <i>v.</i> Faber, 92 U. S. 347..... | 136 |
| Richards <i>v.</i> Chase Elevator Co., 158 U. S. 299..... | 135 |
| Roberts <i>v.</i> Ryer, 91 U. S. 150..... | 151 |
| Rogers <i>v.</i> Fitch, 81 Fed. 959..... | 35 |
| Russell Grader Mfg. Co. <i>v.</i> Zeig Mfg. Co., 259 F. R. 575 | 160 |
| Sheffield Car Co. <i>v.</i> D'Arcy, 194 Fed. 686..... | 133 |
| Simon Florsheim <i>et al.</i> <i>v.</i> Gustav Schilling, 34 U. S. 64 | 136 |
| Smith & Griggs Mfg. Co. <i>v.</i> Delia Sprague, Admr. of Leonard Sprague, deceased, 123 U. S. 249..... | 34 |
| Shelby Steel Tube Co. <i>v.</i> Standard Steel Tube Co., 286 Fed. 863..... | 83 |
| St. Paul Plow Works <i>v.</i> William Starling, 140 U. S. 404 | 35 |
| Thomson-Houston Electric Co. <i>v.</i> Lorain Steel Co., 117 Fed. 249 | 178 |
| Thropp's Sons' Co. <i>v.</i> Seiberling, 264 U. S. 329; 68 L. Ed. 712..... | 171 |
| Torrey <i>et al.</i> <i>v.</i> Hancock, 184 Fed. 61..... | 35 |
| Trussed Concrete Steel Co. <i>v.</i> Goldberg <i>et al.</i> , 222 Fed. 506 | 155 |
| Turner <i>v.</i> Moore, 211 Fed. 466..... | 132 |
| United States Column Co. <i>v.</i> Benham Column Co., 238 Fed. 200 | 141 |

| | |
|---|----------|
| United States Column Co. v. Benham Column Co., 225 Fed. 55..... | 141, 178 |
| Warner Instrument Co. v. Stewart & Clark Mfg. Co. 185 Fed. 507..... | 147 |
| Webster Loom Co. v. Higgins, 4 Ban. & A., 88..... | 34 |
| Weir Frog Co. v. Porter, 206 Fed. 670..... | 147 |
| Wilson & Willard Mfg. Co. v. Union Tool Co. <i>et. al.</i> 249 F. R. 729..... | 161 |
| Westinghouse Electric & Mfg. Co. v. Catskill Illum- inating & Power Co., 121 Fed. 831..... | 34 |
| Westinghouse Electric & Mfg. Co. v. Saranac Lake Elec. Light Co., 108 Fed. 221..... | 35 |
| Western Electric Co. v. Williams-Abbott Electric Co. <i>et al.</i> , 83 Fed. 842..... | 170 |



SUPREME COURT OF THE UNITED STATES

OCTOBER TERM, 1924.

No. 307.

CONCRETE APPLIANCES COMPANY AND WILLIAM H. INSLEY,
Petitioners,

vs.

JOHN E. GOMERY, JOHN C. SCHWARTZ, MICHAEL J. O'MEARA,
AND CONCRETE CONSTRUCTION COMPANY,
Respondents.

BRIEF FOR RESPONDENTS.

Opponent's petition for a writ of certiorari and brief in support thereof show a superficial conflict based on opposite conclusions reached as to the validity of the claims in question in the two cases in the Court of Appeals in the Sixth Circuit and the Third Circuit, but the two records were so different that said conclusions would necessarily have to be different. In fact, as we shall show later, the court in the Sixth Circuit in the earlier suit was misled by the petitioners in that certain of the prior uses which the defendant in the Third Circuit considered to be the

strongest, were known to the petitioners (plaintiffs) at the time of the suit in the Sixth Circuit, but these important defenses were not brought forward by the earlier defendants, nor was any reference made thereto by plaintiffs, so that the petitioners in the present suit are in the inequitable position of having argued for and obtained a very broad interpretation of their claims in the Sixth Circuit on the basis of a record which they knew was incomplete and therefore a false presentation of the facts, a situation which came to light for the first time in the suit in the Third Circuit.

In the earlier case, defendants' record contained the testimony of only one witness, and he was one of the plaintiffs at the time. The defense was based almost entirely on patents, with no suitable background of testimony to explain their degree of success or failure in practice. On the other hand, the defendants, in the later case in the Third Circuit, had over fifty witnesses who gave a full history of the development of the practical art.

In the first suit, defendants' entire proofs will be found in the three and a half pages, beginning with page 32 of the Court of Appeals record, in the Cincinnati case. This printed record is before the court as a joint physical exhibit.

In the second suit, in Philadelphia, the record comprised nearly one thousand pages of printed testimony, relating to the early use of apparatus for distributing wet concrete and illustrating the development of the art up to and somewhat beyond the date of the Callahan patent in suit, February 8, 1910.

This record also included many prior publications other than patents, including various copies of the Engineering News and the Engineering Record, prior to the date of the patent in suit, a number of text books, excerpts from the Transactions of the American Society

of Civil Engineers and certain early catalogs, in addition to a number of patents, many of which latter, it is true, were the same as those set up in the answer in the first suit. These patents, however, in the second suit have a different bearing on the issues, in view of the testimony given. For example, the Smith patent 948,746, representing one of the best defenses developed in the second suit, was not filed until after the Callahan patent in suit was filed, and therefore was not a reference against Callahan, as Judge Denison held in the opening statement of his opinion (262 F. R. 960). However, in the later Philadelphia suit, the precise Smith apparatus on which the Smith patent was based, was shown beyond a reasonable doubt to have been used in St. Louis in the summer of 1908, thus establishing an actual use of the invention about five months earlier than the filing date of the Callahan patent and shifting the burden of proof to petitioners. This illustrates the manner in which the defenses in the later suit differed materially from the defenses in the first suit, even though some of them were based ostensibly on the same patents.

The differences between the records in the two cases cannot be better emphasized than to quote from the opinion of the Third Circuit Court of Appeals (291 F. R. 492).

“Had the actual state of the prior art been shown to the patent authorities we cannot feel they would have granted this patent and while we feel embarrassed to find ourselves at variance with the Circuit Court of Appeals of the Sixth Circuit, which in the case of *Concrete Appliances Co. et al. v. Meinken et. al.*, 262 Fed. 958, found this patent valid, we feel assured that the meager record before that court wholly failed to disclose the uncontradicted proofs on which we base our conclusions.”

Unless petitioners can point out some fundamental

error in the conclusions reached by the Court of Appeals of the Third Circuit, it is evident that the decree of the latter court should be affirmed.

Statement of the Case.

Petitioners' statement of the case is sufficient as to the facts set out, but contains also certain conclusions with which we do not agree. For example, page 4 of their brief states that "There does not appear to be any serious issue as to infringement here." Page 5 of their brief states "The records before the two Courts of Appeals are believed to be substantially the same so far as they relate to the question of aggregation or invention." On page 6, we find "these prior uses are thought to be substantially uses of the apparatus shown in the prior patents which were considered by that Court" (Sixth Circuit). The following is found on page 7:

"The conflict therefore appears to be one of decisions based upon substantially the same facts, or at least facts which have substantially the same relation to the questions decided."

We do not concur in any of these views, but as a knowledge of the record is required for a complete understanding of our position, and as we have discussed these points in the main part of our brief, we defer argument thereon.

Outline of Respondents' Argument.

The patent in suit. Claims analyzed and illustrated.

Defendants' apparatus. Three types described and illustrated.

History of Callahan patent:

- (A) Interferences in the Patent Office.
- (B) Suits elsewhere based on this patent.
- (C) The present suit in the Third Circuit.

The claims are invalid:

A. They are anticipated; the same combination of five elements or their equivalents having been used before the date of Callahan's alleged invention, for distributing not only concrete, but grain, coal, and other materials.

B. The claims do not cover patentable combinations, but mere aggregations of the several elements.

C. The combination claimed does not represent invention but a natural evolution in the art.

D. The claims represent a mere double use of apparatus previously used for many years for distributing other material.

E. The Callahan apparatus was impractical and inoperative until its inherent difficulties were overcome by changes made by others.

The claims are not infringed:

A. They are not broad pioneer claims, and, if valid at all, are to be narrowly construed:

I. Because of the interference proceedings in the Patent Office, in which Callahan conceded priority to another;

II. Because of limitations imposed by the prior art; and

III. Because of plaintiffs' admission in answering defendants' interrogatory.

B. Defendants' apparatus differs from the combination described and claimed. Three types of apparatus are used by defendant.

I. Chute supported by cable, now admitted to be no infringement.

II. Trussed chute with no boom, as a separate element.

III. Trussed chute having lower end supported by inclined prop. The chute in this apparatus, as in the preceding type, is not a "conduit" (a pipe), but an open trough, and it is not "carried by" the boom in the sense intended in the claims, *i. e.*, supported throughout its length.

No public acquiescence. On the contrary, the patent has been openly defied, and a number of suits which were filed have not been pressed to a hearing.

The decision of the Court of Appeals for the Third Circuit should be followed, rather than that of the Sixth Circuit.

The plaintiffs are not entitled to equitable relief, because they have not come into equity with clean hands.

Argument.

The new defenses before the court in the Third Circuit fully upheld respondents' contention that the four claims in suit are invalid.

The "uncontradicted proofs" as Judge Buffington called them in the opinion (R. 940) were so overwhelming that the Callahan patent, which the Sixth Circuit Court of Appeals had been led to believe was the ex-

pression of a "bold and original thought" and "inventive thought of a high order" accompanied by apparatus which "substantially differed from anything which had ever been constructed for any purpose" (262 F. R. 964) was shown to be in fact "rather a step backward" (R. 939) as stated by the Third Circuit Court of Appeals, after an examination of the first full and complete history of the prior art which had ever been presented to a court in any of the half dozen suits in which this patent had been involved since 1910, the year in which it issued and in which the first suit was filed.

For the first time in the life of this patent, petitioners' false pose as the owner and licensee, respectively, of a broad "pioneer patent" has been disclosed through the efforts of the respondents to present a *bona fide* showing of the development of the art. In view of this showing the Third Circuit Court of Appeals stated:

"We are unable to find any element of novelty either in the separate elements Callahan used or in the unification of such elements in the apparatus he suggested." (R. 940.)

In the first case, petitioners misled both the lower and the upper courts in the Sixth Circuit by their silence and profited for several years, as they had profited in the past through the attempted exercise of an unjust monopoly. The facts presented to the Third Circuit Court of Appeals showed that this apparatus should have been available to the public for use throughout its entire development, beginning more than twenty years ago; that petitioners had detailed knowledge of some of the precise prior uses and developments which caused the Third Circuit Court of Appeals to declare the claims invalid and to refer to the alleged monopoly as an attempt to embarrass commercial developments by "this patent by which the art is now sought to be blanketed"

(R. 940). Plaintiffs' knowledge of these important defenses was unquestionably established through a number of St. Louis witnesses, who testified in the present case that they had previously testified in an earlier suit in which the same Concrete Appliances Co. was the plaintiff in Vancouver, Canada, No. 3287, defended by another of the present plaintiffs, Insley, before he had become a licensee. Mr. Insley himself was compelled to admit these facts when testifying in open court for plaintiffs (petitioners) in Philadelphia (R. 122, 123). Mr. Insley also admitted that the decision in the Cincinnati case was rather widely advertised. *The admission with reference to his knowledge of the insufficiency of the defenses in the Cincinnati suit was not made until compelled by a direct question from the court, after which the position in which the plaintiff had placed himself was commented on by the court as follows: "This line of interrogation is based upon the clean hand doctrine of the Courts of Chancery" (R. 124).*

The Patent in Suit.

The patent in suit No. 948,719, issued February 8, 1910, to Concrete Appliances Company, on an application of Lee Callahan, filed January 21, 1909.

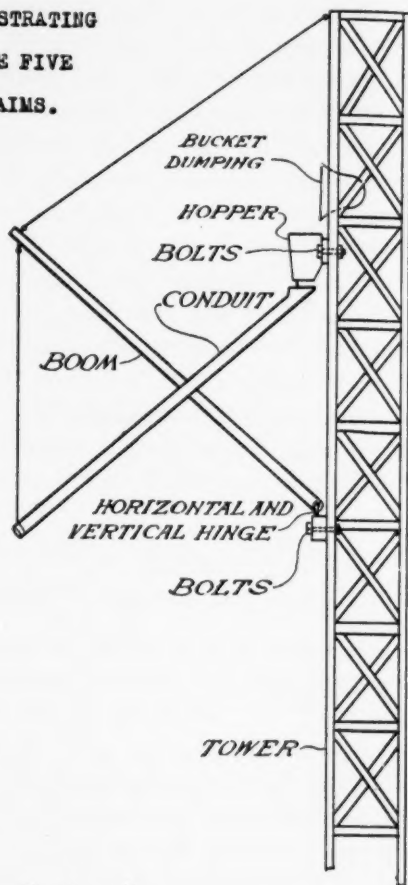
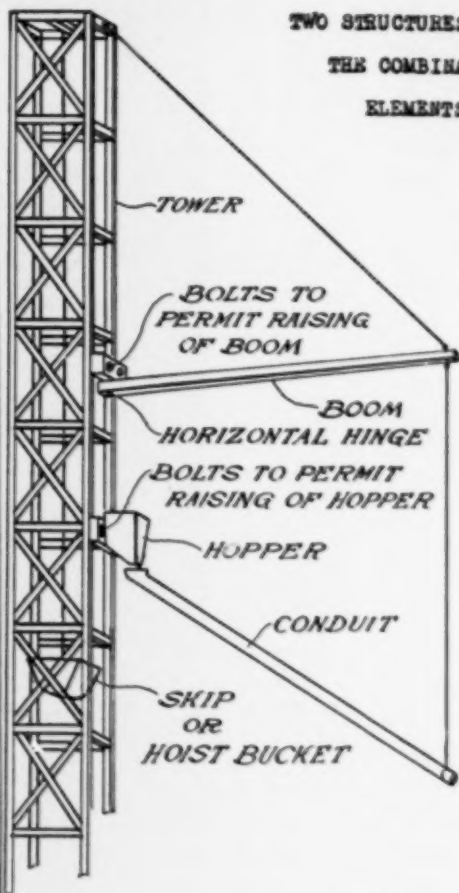
It relates to the elevation and distribution of wet concrete through a pipe or conduit supported by a boom.

Concrete consists of a mixture of crushed stone, sand and cement. The proportions of the three ingredients may be varied, particularly the amount of water used. If very little water is used the concrete is said to be "dry." Such concrete was used almost universally twenty or thirty years ago. It required considerable labor to mix dry concrete.

Most concrete to-day is mixed in power driven rotata-



TWO STRUCTURES EACH ILLUSTRATING
THE COMBINATION OF THE FIVE
ELEMENTS OF THE CLAIMS.



ble mixers, in which more water is used, such concrete being "wet," that is, of a consistency which will enable it to flow.

The apparatus of the patent in suit was intended to handle wet concrete. After the ingredients are mixed they are discharged into a hoist bucket which is elevated in a tower and automatically dumped into a hopper from which the semi-liquid concrete flows down one or more sections of a conduit supported by a boom, which latter enables the conduit to be swung to different positions. The concrete may flow directly from the conduit into the wooden forms where it hardens, or it may be conveyed to remote parts of the work by hand-pushed carts or wheelbarrows.

Claims 1, 2, 5 and 13 of the patent are in issue. These claims, although differing somewhat in phraseology, cover the same five elements in combination, *i. e.*, (1) a tower, (2) a hoist, (3) a hopper, (4) a boom, and (5) a conduit carried by the boom.

Claim 5, in addition, calls for a vertical adjustment of the conduit and of the boom.

There are twelve other claims in the patent which are not involved in suit. These other claims cover more in detail the five elements referred to, as well as additional elements.

Claim 1, which is fairly typical, reads as follows:

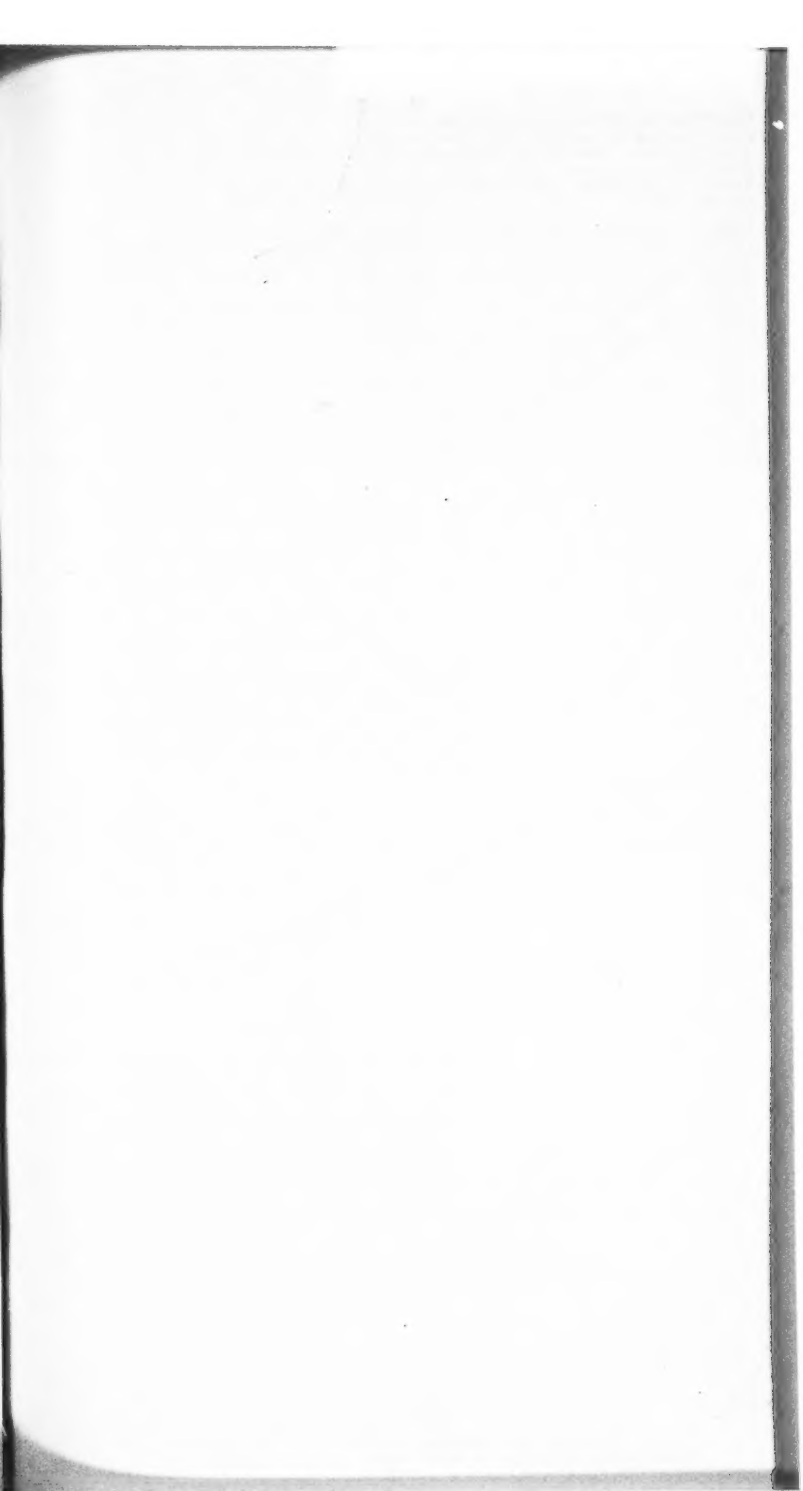
"An apparatus for the purpose described, comprising a tower, a suitable supported horizontally movable boom connected therewith, a conduit carried by the boom, means for raising plastic material to a suitable point in the height of the tower, and means for receiving plastic material from said raising means and conducting the same to said conduit."

The accompanying drawings will serve to illustrate this combination of five elements, in two different forms, without entering into a discussion of various limitations

which may be imposed either by the wording of the claims or by the prior art. Generally speaking, the apparatus of the drawings, if earlier than the Callahan invention, would be an anticipation, and if later would be an infringement.

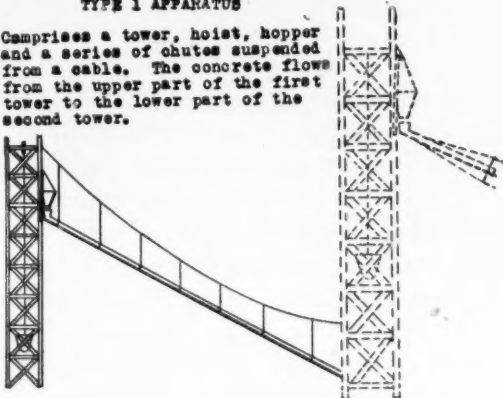
It will be seen from the claim, that the tower may be any tower, either wood or steel. The boom may be a timber or pole, or an open lattice work, and may be either horizontal or on an incline, as long as it can swing from side to side. The conduit may be any ordinary piece of pipe, of no specific length or diameter, and presumably sloping downward at almost any angle, although nothing is said as to such slope. The claim does not specify whether the conduit is above or below the boom, or what the relation is. The means for raising plastic material may be what is commonly known as a skip hoist, or any kind of a hoist either inside or outside of the tower, and the means for receiving plastic material may be any sort of a receptacle or hopper inside or outside of the tower, with its outlet arranged in some manner to discharge the plastic material into the conduit. No swivel connection is claimed.

The foregoing analysis applies to each of the four claims in suit, except that claim No. 5 implies a change from time to time in the location of the hopper and the boom with reference to the height of the tower. As indicated in the drawing, this means merely that the hopper may be unbolted from the tower, raised to a higher point, and again bolted in place; and the seat or support for the lower end of the boom may likewise be raised and bolted in some new position.



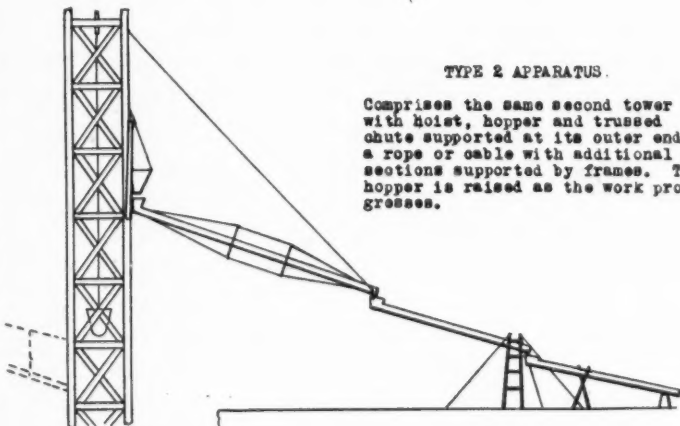
TYPE 1 APPARATUS

Comprises a tower, hoist, hopper and a series of chutes suspended from a cable. The concrete flows from the upper part of the first tower to the lower part of the second tower.



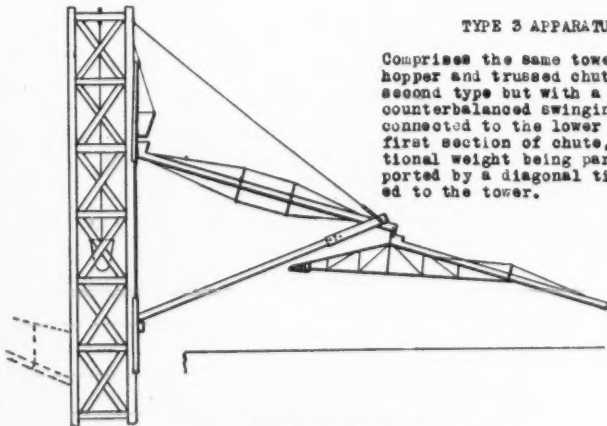
TYPE 2 APPARATUS.

Comprises the same second tower with hoist, hopper and trussed chute supported at its outer end by a rope or cable with additional chute sections supported by frames. The hopper is raised as the work progresses.



TYPE 3 APPARATUS

Comprises the same tower, hoist, hopper and trussed chute of the second type but with a heavy counterbalanced swinging chute connected to the lower end of the first section of chute, the additional weight being partially supported by a diagonal timber pivoted to the tower.



Defendants' Apparatus.

Defendants' concrete distributing apparatus, used in building the Gomery & Schwartz automobile warehouse at Twenty-Fourth and Market Streets, Philadelphia, is shown in the accompanying drawing. It involves three types of apparatus.

The first type comprises a tower, hoist, hopper, and a series of chutes or metal troughs suspended from a cable.

The second type comprises a tower, hoist, hopper, and trussed chute supported at its outer end by a rope or cable, connected to the tower near the top. A second section of chute is connected to the lower end of the first chute section by a swivel connection, the lower end of the second chute being supported on a trestle or horse on the floor. The third section of chute extends from the second chute and rests on braces or horses.

The third type of apparatus comprises the same tower, hopper, hoist, and trussed chute of the second type of apparatus, but with the addition of a heavy counterbalanced swinging chute connected to the lower end of the first section of chute, this additional weight being supported by a timber, extending diagonally upward from the tower to the lower end of the first chute section, and by the cable which supports the upper end of the timber. For purposes of discussion this timber or brace may be called a boom.

As will be explained hereinafter, the building was begun, using apparatus of types 1 and 2, but before it was completed the supplemental equipment was added, and the building was finished using apparatus of types 1 and 3.

Petitioners have admitted, in answering one of defend-

ants' interrogatories, that type 1 apparatus is not an infringement. (R. 18.) The issue narrows down, therefore, to types 2 and 3, *i. e.*, a trussed or stiffened chute supported by a cable from a tower, and the same chute supported in part by a boom.

Answering petitioners' brief in which it is stated this type 1 apparatus was not complained of because of the immobility of the apparatus and lack of any boom, we call attention to the fact that petitioners made no effort to disclaim such apparatus, publicly or otherwise, until after seeing defendants' affidavits filed in opposition to the preliminary injunction motion, showing this cable type of suspension as used in St. Joseph, Mo., in the summer of 1908, together with other defenses which plainly showed that it would be unwise for petitioners to contend for an interpretation of the Callahan claims sufficiently broad to include an inclined cable which could be swung from the tower at different angles, as the equivalent of a boom, although the decision of the Sixth Circuit Court of Appeals (262 Fed. 958) contained statements broad enough to justify the public in assuming that Callahan was a pioneer as to everything of this nature regardless of details.

History of Callahan Patent.

(A) INTERFERENCES IN THE PATENT OFFICE.

The Callahan patent, No. 948,719, issued February 8, 1910, on an application filed January 21, 1909. This application became involved in the Patent Office in two interferences; one a three-party interference, No. 30,533, involving Callahan, Emtman and Smith; the other a two-party interference, No. 30,618, involving Callahan and Emtman. (R. 641-644.)

The three-party interference involved very broad claims. Each party, in the summer of 1909, filed a preliminary statement, *i. e.*, a sworn statement, giving their dates of conception, disclosure, reduction to practice, etc., with respect to their inventions. This interference was won by Smith, through a concession of priority from Callahan and Emtman, after a conference between the three attorneys for the parties and with knowledge of the contents of the three sworn statements. (R. 371, Q. 15.)

The two-party interference involved what we maintain are subordinate claims, and was won by Callahan through a concession of priority from Emtman. These interferences are discussed more fully on another page of this brief. As a result of these two contests and settlements the patents dominate in the following order: Smith, Callahan, Emtman. See the record of the Cincinnati suit, "Joint Exhibit for Plaintiffs and Defendants," which contains these concessions.

All three patents were assigned to the Concrete Appliances Company of Missouri, and issued the same day, February 8, 1910, to said company. Concrete Appliances Company of Missouri assigned them to the Concrete Appliances Company of Los Angeles, California, November 12, 1910. An exclusive license was granted to William H. Insley, of Indianapolis, September 13, 1915, subject to the right of the F. O. Engstrom Company, of Los Angeles, California, to make and use the apparatus in its building operations. (Said Engstrom Company had owned the Emtman application from the out set through an assignment made February 6, 1909, before the application was filed in the Patent Office, and this company conducted the prosecution of the application.) An arrangement was made whereby William H. Insley has been permitted to license the Ransome Concrete Machinery Company and the Lakewood Engineering Company.

(B) SUITS ELSEWHERE BASED ON THIS PATENT.

The Callahan patent has been made the basis of the following suits in the U. S. Courts:

In St. Louis, Missouri, *Concrete Appliances Co. v. E. C. Gerhard Co. & Board of Education of the City of St. Louis* in March, 1910. This suit was dismissed for want of prosecution in September, 1911.

In Los Angeles, California, *Concrete Appliances Co. v. Insley Mfg. Co., Langford, Bacon & Meyers and Snare & Triest*, in the fall of 1913.

In the Western District of Pennsylvania against a party named Hogg.

In the Western District of Missouri against a party named Gray. (See Defendants' Record, p. 352 for this list.)

In Chicago, Illinois, in August, 1916, entitled *Concrete Appliances Co. v. Witherspoon-Englar Co. and Archer Iron Works*, dismissed for want of prosecution October, 1920.

In Cincinnati, Ohio, in August, 1916, entitled *Concrete Appliances Co. & William H. Insley v. Dietrich Meinken, Roy C. Owens and George B. Curd*, involving both the Callahan patent and the Smith patent 948,746, this case having been decided by the Court of Appeals in January, 1920 (262 F. R., 958), sustaining the Callahan patent and holding the Smith patent invalid.

There was also a suit in Canada (Vancouver, B. C.) on the corresponding Canadian Callahan patent, in 1913, entitled *Concrete Appliances Co. v. Rourke et al.*, No. 3287, in addition to the present suit. None of the suits filed in the United States went to a hearing on the merits except the one in the Sixth Circuit in which, as we shall show, there was a very meager defense. (See Defend-

ant's Exhibit 65 and statement of counsel at the bottom of page 345 of the Record.)

(C) THE PRESENT SUIT IN THE THIRD CIRCUIT.

The present suit was intended by defendants as a test case, so that this Callahan patent may be adjudicated fully and fairly after a thorough investigation and presentation of the history of the art and with respect to two types of apparatus, in order that the public generally, and more particularly contractors, engineers, and builders, may know what equipment they are free to use and what equipment they may not use.

Suit was brought July 22, 1920, and a hearing on a preliminary injunction motion was had, the court suggesting that defendants file a bond, plaintiffs acquiescing. Defendants accepted the suggestion and filed the bond, without presenting their case on the merits. (R. 658.)

Interrogatories were then filed by defendants, asking what claims of the patent in suit were relied on, and also asking plaintiffs to state the earliest date of invention which they would allege for the respective claims in suit. Plaintiffs answered the interrogatory regarding the claims, specifying claims 1, 2, 5 and 13 of the Callahan patent, but were not required by the court to disclose their earliest date of invention. They answered further interrogatories to the effect that defendants' type 1 apparatus was not an infringement.

Defenses—Claims in Suit Are Invalid (A) as Same Combination of Five Elements, or Their Equivalents, Was in Use Before the Date of Callahan's Alleged Invention for Distributing Not Only Concrete, But Grain, Coal and Other Materials.

For convenience, we shall divide these prior defenses into groups, discussing them as they developed in particular localities.

INGALLS BUILDING.

Built in Cincinnati 1902-3: This building is generally conceded to be a pioneer of its type, being the first tall, reinforced concrete building in the United States. Its construction was described and illustrated in considerable detail in the Engineering News of July 30, 1903 (see Exhibit 7). This building was built in the main with the standard apparatus available about that period and still in use. It consisted of a Ransome tower, which was built higher and higher by adding sections to it as the building progressed, a hoist within the tower for hoisting the concrete from the mixer, a wooden hopper supported on the tower and at its outer end by upright wooden planks on the floor. Hand carts received the concrete from the hopper, and were pushed about by the workmen and the concrete dumped into the forms.

When the second floor was reached a modification was made in this apparatus, proposed by R. P. Anderson, vice-president of the Ferro Concrete Construction Company. This change consisted in permitting the concrete to flow from the hopper through a series of metal chutes or troughs supported on braces or horses, and moved about by hand to distribute the concrete over the entire floor area of 50 x 100 feet. As many as ten sections of

chute were used as a maximum, with a minimum of one section—see Photograph Exhibits 5, 6 and 7, also Culp Exhibit 24. The use of this apparatus is clearly established by the photographs referred to, the stipulated testimony of the photographer, C. H. Longley (R. 273), the deposition of A. E. Culp, superintendent of the Ferro Concrete Construction Company (beginning with page 270), and the stipulated testimony of George Botsung (R. 281).

Culp testified that the floor area of this building was "very small" (Q. 72), and for this reason the use of chutes showed no economy over the wheelbarrow or cart method, and therefore the chutes were not used above the second floor, although the chuting apparatus was entirely successful (Q. 77). He also explained that the use of carts or chutes at the present time also depends upon the size of the building and the yardage of concrete; that putting in and taking out a chuting system is very costly; and that his company, the Ferro Concrete Construction Company, today in many cases, finds it more economical to wheel concrete than to chute it, even with the greatly improved modern apparatus (Qs. 68-70). Culp testified (Q. 79) that one or two of the original steel chute sections were still in existence at their warehouse, and plaintiffs' counsel was offered the privilege of inspecting them if he wished.

Mr. Culp also brought out the fact that at that time the concrete engineers in the United States were all in favor of a very dry mixture, whereas today the view is just the reverse, calling for a wet mixture (Q. 87).

The use of this apparatus on the Ingalls Building was also corroborated by a Chicago contracting engineer, L. J. Mensch, whose deposition begins on page 144. He testified that he was in Cincinnati at the time the Ingalls

Building was proposed, and that he suggested building it of reinforced concrete. He also testified to visiting the building and inspecting the operations on the second and third floors and seeing very wet concrete flowing from a single section of chute supported at its outer end by a rope, or two ropes, fastened on the top of the tower to the end of the chute; and that a man was moving the end of the chute back and forth a few feet while the concrete was running out of the end. In other words, the chute was being swung back and forth.

Among the other witnesses called by defendants a considerable number knew of the Ingalls Building as a pioneer structure of this type.

Answering plaintiffs' brief, which alleges that this apparatus was an abandoned experiment, we call attention to the fact that its publication, with photographs, in the summer of 1903 was a disclosure to the public which would enable any resourceful contractor to make use of chutes, whether supported by trestles or by any other conventional supporting means. It is hardly correct to call this an "abandoned experiment," since the temporary discontinuance of the apparatus was due to special local conditions, which apply as much today as they did at that time. Similar apparatus was used afterwards (R. 275, Qs. 77-79). This apparatus solved the real problem, which was that wet concrete could be made to flow through chutes inclined at a very flat angle, as shown in the publications referred to and in Exhibit 5 (R. 273, Q. 43).

The apparatus comprised a tower, hoist, hopper and chutes supported by horses as a substitute for a boom. No carts were used on the second floor, except possibly where the concrete was dumped into the column forms, the inspector demanding a drier mixture for the columns. In fact, similar apparatus is used in many cases today

for depositing concrete in column forms (R. 273, Qs. 45-49).

Plaintiffs are mistaken in alleging that the hopper was not supported by, or vertically adjustable on the tower. It was supported partly by the tower, and was, in fact, moved from floor to floor as the work progressed (R. 274, Qs. 53-55).

Regarding Mensch's testimony, this witness does not approve of very wet concrete or chute distribution, except in a few special cases, and it is therefore incorrect to assume that he failed to see the possibilities in this Ingalls' building apparatus. As shown elsewhere in this record, government engineers did not approve of this method of construction for many years after the time in question.

Mensch explains very clearly why the expense of such apparatus on many types of work is prohibitive as compared with the wheelbarrow or cart method, which is still used. (See p. 150, Q. 30, and p. 157, Q. 77.)

Mensch's testimony brings out the fact that it was old to raise a boom on a tower during the erection of a building. This was done on his Masonic Temple work in 1903-04. Another instance is the McGraw Building, built in New York in 1906-07, and described at least as early as November, 1907, in a publication quoted from on page 147 of the Record. Each boom was 75 feet long, commanded a large area, and was raised from floor to floor on the tower in building this eleven-story concrete building, and was used to pick up and deposit buckets of concrete.

LYNNHAVEN HOTEL,

built in Norfolk, Virginia, in 1906, to receive visitors to the Jamestown Exposition in the spring of 1907.

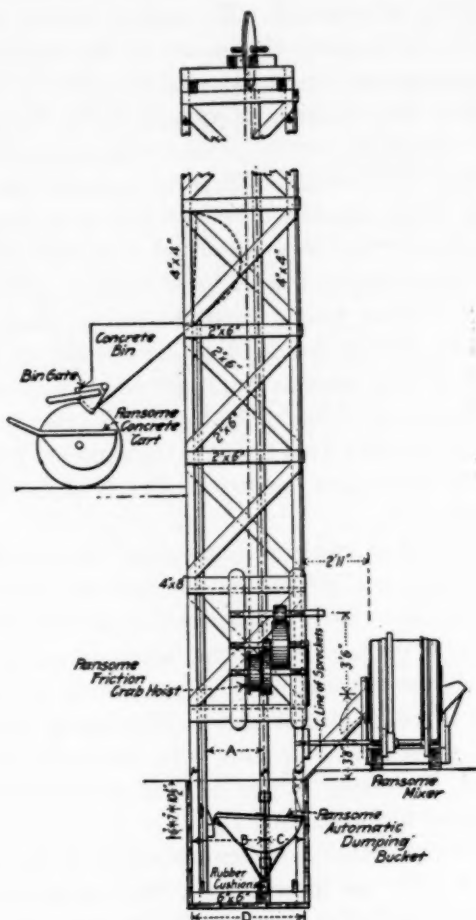
The concrete work was supervised by Arthur L. Smith and was carried on during the late summer and entire fall of 1906.

This was the same Smith whose patent, 948,746, issued the same day as the Callahan patent in suit, and to whom Callahan conceded priority as to certain broad claims, recently held invalid by the U. S. Circuit Court of Appeals for the Sixth Circuit.

The hotel had an eight-story reinforced concrete frame and was the first tall building of this type to be erected in Norfolk. A photograph of the concrete frame is in evidence as Exhibit 19¹. This photograph was produced by Smith, who had had it in his possession since it was taken by the photographer under his direction in the fall of 1906 (R. 217, Qs. 6-8). In the photograph there is a sign on the building reading:

“The Lynnhaven modern fire-proof hotel, 200 rooms, 75 private baths, opens April 1, 1907.”

The concrete for the first three floors was distributed in the usual manner, that is, by means of a tower, hoist, hopper and wheelbarrows. Such apparatus was commonly used at that time, Smith testified in answer to Q. 35, p. 219, and stated on being shown Deefndants' Exhibit No. 21, illustrated in the accompanying cut, that “this tower was used to quite an extent throughout the country at the time I conceived the idea of spouting” (Q. 36), and that (Q. 37, p. 220) “the hopper was generally lifted from one story to another as the work progressed.” When the fourth floor was reached Smith tried out a modification of the apparatus, which he tes-



A PLANT FOR MIXING AND HOISTING CONCRETE.

Defendants' Exhibit 21
 Ransome Concrete Machinery
 Co., 1906 Catalog. Page 42.

tified he had in mind for some time, in order to permit the spouting of concrete. He made a chute, supported the upper end beneath the mouth of the hopper with a swivel arrangement and supported the outer or lower end of the chute by a cable or block and tackle from a point near the top of the tower. This enabled the chute to be swung from side to side. When the concrete was flowing down the chute, the lower end of it rested on a second inclined chute, which was supported on horses or movable frames. Part of the time a third section or chute was employed. These chutes could be moved about by the workmen to change the point of distribution of the concrete and in this manner any part of an area could be reached having a radius of 30 to 40 feet from the tower. Wheelbarrows were used to carry the concrete to the portions of the floor area beyond the reach of these two or three chutes.

This apparatus was used from about the fourth to the seventh floors and proved to be entirely satisfactory. The main point to be demonstrated, apparently, was that concrete of a proper consistency could be made to flow through chutes without causing separation of the sand and cement from gravel or stone. This matter Smith had discussed on several occasions with architects and engineers, and, like many others at that early period, they were opposed to the method (Q. 5).

It will be noted that this demonstration in the summer and fall of 1906 was more than a year earlier than any date claimed for Callahan in his alleged experiments with the flow of concrete through pipes on the Majestic Theater Building in Los Angeles.

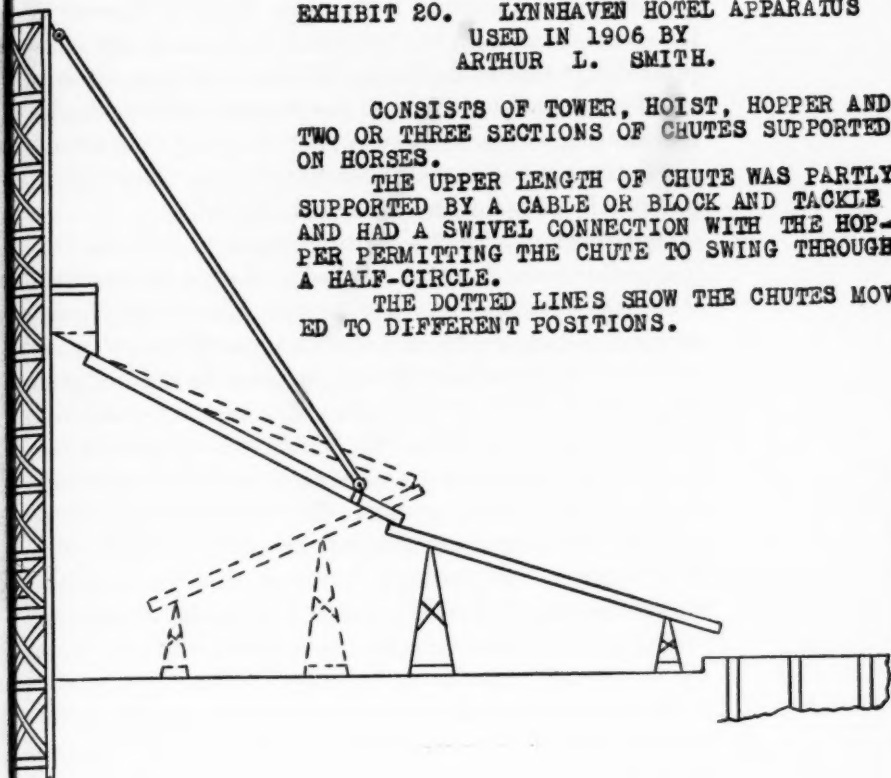
Smith made a sketch of this apparatus, which is in evidence as Exhibit 20. Part of it is reproduced in the accompanying cut. It consisted of a tower, hopper, hoist, chute and a cable for supporting the chute during the

**EXHIBIT 20. LYNNHAVEN HOTEL APPARATUS
USED IN 1906 BY
ARTHUR L. SMITH.**

CONSISTS OF TOWER, HOIST, HOPPER AND
TWO OR THREE SECTIONS OF CHUTES SUPPORTED
ON HORSES.

THE UPPER LENGTH OF CHUTE WAS PARTLY
SUPPORTED BY A CABLE OR BLOCK AND TACKLE
AND HAD A SWIVEL CONNECTION WITH THE HOP-
PER PERMITTING THE CHUTE TO SWING THROUGH
A HALF-CIRCLE.

THE DOTTED LINES SHOW THE CHUTES MOV-
ED TO DIFFERENT POSITIONS.



time that it was swung to one side to change the angle of distribution.

As we shall show later, this was the precise apparatus claimed to have been used by Callahan, or, as we contend, by Emtman, in January, 1908, on the Majestic Theater in Los Angeles, except that the Smith apparatus was more practical, in that he used open troughs or chutes, whereas small pipes were used first on the Majestic Theater Building, causing so much difficulty with clogging that successively larger sizes were experimented with. The modern practice is to use chutes almost exclusively.

In connection with this Smith drawing, we contend that if the claims are construed broadly enough to constitute the inclined supporting cable or rope, a boom, this Lynnhaven Hotel apparatus constitutes a use of the invention considerably more than two years prior to the Callahan filing date in 1909. If the claims are narrowly construed, as we contend they should be, neither this apparatus nor the later Majestic Theater apparatus, on which plaintiffs rely, will support the counts. However, the supporting rope or cable used by Smith is the mechanical equivalent of a boom, and we contend, therefore, that the Callahan claims are unpatentable over the prior Smith apparatus.

The record shows that the tower and the hopper were raised several times as the Lynnhaven Hotel progressed from about the fourth to the seventh story, providing the *vertical adjustment* of the cable (boom) and the hopper, which comprise the additional limitations of claim 5 in suit.

Smith's testimony was corroborated in its essential particulars by R. B. Preston and T. A. Tatterson. Preston was inspector for the architects on the Lynnhaven Hotel during the last half of 1906. Tatterson is the son of E. Tatterson, deceased, the latter having been the contractor for this hotel.

Preston testified (R. 238) regarding the use of one or possibly two chutes supported on saw horses in conjunction with a tower, hoist and hopper, the hopper being elevated during the progress of the work. His recollection of the second chute was rather doubtful, and he did not recall the third chute. However, the claims in suit do not call for a second chute or conduit. Neither did he recall the cable from the lower end of the first chute to the tower.

By way of explanation of Preston's indistinct recollection of some of these details recalled more vividly by Smith and Tatterson, his testimony shows that Preston was not particularly interested in the means of conveying the concrete to the point of deposit, being more interested in the consistency of the concrete and the ultimate strength of the structure (R. 246, X-Qs. 81-82).

Tatterson testified (R. 249) that he worked on this building with his father during his summer vacation of 1906, returning to Washington and Lee University the latter part of September, where he had been studying engineering for two or three years. Before returning to college he saw the Smith apparatus in use, consisting of a tower, hoist, hopper and first section of trough supported by a cable or rope, with one or possibly two additional lengths of trough supported on horses.

There is some inconsistency regarding the time in 1906 when the work was begun, as brought out by Preston and Tatterson, Preston stating that he went to work in the early part of September, 1906, at which time the excavations had been made and the piling driven, whereas Tatterson returned to college the latter part of September, at which time the concrete structure had at least reached the fourth floor. Preston gives no incident by which to fix the early September date, however, and if he was as-

time that it was swung to one side to change the angle of distribution.

As we shall show later, this was the precise apparatus claimed to have been used by Callahan, or, as we contend, by Emtman, in January, 1908, on the Majestic Theater in Los Angeles, except that the Smith apparatus was more practical, in that he used open troughs or chutes, whereas small pipes were used first on the Majestic Theater Building, causing so much difficulty with clogging that successively larger sizes were experimented with. The modern practice is to use chutes almost exclusively.

In connection with this Smith drawing, we contend that if the claims are construed broadly enough to constitute the inclined supporting cable or rope, a boom, this Lynnhaven Hotel apparatus constitutes a use of the invention considerably more than two years prior to the Callahan filing date in 1909. If the claims are narrowly construed, as we contend they should be, neither this apparatus nor the later Majestic Theater apparatus, on which plaintiffs rely, will support the counts. However, the supporting rope or cable used by Smith is the mechanical equivalent of a boom, and we contend, therefore, that the Callahan claims are unpatentable over the prior Smith apparatus.

The record shows that the tower and the hopper were raised several times as the Lynnhaven Hotel progressed from about the fourth to the seventh story, providing the *vertical adjustment* of the cable (boom) and the hopper, which comprise the additional limitations of claim 5 in suit.

Smith's testimony was corroborated in its essential particulars by R. B. Preston and T. A. Tatterson. Preston was inspector for the architects on the Lynnhaven Hotel during the last half of 1906. Tatterson is the son of E. Tatterson, deceased, the latter having been the contractor for this hotel.

Preston testified (R. 238) regarding the use of one or possibly two chutes supported on saw horses in conjunction with a tower, hoist and hopper, the hopper being elevated during the progress of the work. His recollection of the second chute was rather doubtful, and he did not recall the third chute. However, the claims in suit do not call for a second chute or conduit. Neither did he recall the cable from the lower end of the first chute to the tower.

By way of explanation of Preston's indistinct recollection of some of these details recalled more vividly by Smith and Tatterson, his testimony shows that Preston was not particularly interested in the means of conveying the concrete to the point of deposit, being more interested in the consistency of the concrete and the ultimate strength of the structure (R. 246, X-Qs. 81-82).

Tatterson testified (R. 249) that he worked on this building with his father during his summer vacation of 1906, returning to Washington and Lee University the latter part of September, where he had been studying engineering for two or three years. Before returning to college he saw the Smith apparatus in use, consisting of a tower, hoist, hopper and first section of trough supported by a cable or rope, with one or possibly two additional lengths of trough supported on horses.

There is some inconsistency regarding the time in 1906 when the work was begun, as brought out by Preston and Tatterson, Preston stating that he went to work in the early part of September, 1906, at which time the excavations had been made and the piling driven, whereas Tatterson returned to college the latter part of September, at which time the concrete structure had at least reached the fourth floor. Preston gives no incident by which to fix the early September date, however, and if he was as-

used for distributing concrete. Two of them were colored laborers. It will also be borne in mind that Smith does not claim to have used this apparatus on each floor of the building, but only from about the fourth to the seventh floors, so that a thorough familiarity with the apparatus used on the other floors would not have resulted in a knowledge of the Smith apparatus.

We contend that the testimony of *one* opposing witness as to the existence of a trough is more persuasive than the negative testimony of a considerable number of others.

The testimony of defendants' witnesses, Preston and Tatterson, shows that plaintiffs' attorney conferred with both of them at the time he visited Norfolk in the summer or fall of 1920, presumably for the purpose of preparing the affidavits used in rebuttal in connection with the preliminary injunction motion (R. 241, Qs. 26-31, and R. 254, Qs. 64-71). Preston and Tatterson said that they told plaintiffs' attorney what they knew, but that they were not asked to sign an affidavit. This investigation by plaintiffs' attorney shows that it was as easy to find witnesses who *did* remember Smith's apparatus as it was to find those who did not remember it, and the fact that these other witnesses were passed by is significant.

Plaintiffs are indeed in an embarrassing situation with reference to this early use, as they have owned the Smith patent ever since it issued, containing broad claims, shown from the record at the time to have been based by the inventor on this Lynnhaven use, and which claims plaintiffs have accepted on the assumption that such use was true, and, after their attorney had had ample notice of the specific 1906 building in Smith's preliminary statement and had had an opportunity to visit Norfolk, had he wished to do so. Instead, plaintiffs' attorney (also Emtman's attorney) accepted a favorable report of

the investigation made by Smith's attorney, James Love Hopkins, of St. Louis (R. 371, Qs. 12-18), whose testimony is not even mentioned by plaintiffs in their discussion of this prior use. Furthermore, in the Cincinnati suit, based on the Smith and Callahan patents, plaintiffs no doubt would have carried the date of Smith's invention back to this Lynnhaven job in 1906 had the defendants made it necessary for them to do so.

The portions of the testimony quoted by plaintiffs are somewhat misleading, but the apparent inconsistencies are explained in many cases by reading either the entire answers or those immediately following: For example, Preston did not testify that the "general features" of the Lynnhaven apparatus were shown both in Smith Exhibit 20 and Kern Exhibit E, but limited his answer strictly to the "hopper arrangement" in discussing the Kern sketch in his answer to Q. 39 (not Q. 30 as stated in plaintiffs' brief).

Smith's formal affidavit accompanying his application stating that he did not believe his invention had been in "public use" for more than two years is readily explained by the fact that he may not have understood it fully or he may have considered this 1906 apparatus to have been an *experimental* use of his invention, followed by further use on the Vinery Building and the St. Louis Coliseum. Doubtless plaintiffs will agree that this was an experimental use in 1906, as they would hardly wish to have it charged that they brought suit in the Cincinnati court on a patent to Smith which, to their knowledge, had been in public use for more than two years before the application was filed; in other words, on an invalid patent. Whether a public use or an experimental use, it is a prior invention, and was undoubtedly successful.

Tatterson would unquestionably remember this apparatus very distinctly, for the reason that he was studying

engineering at college and was doing this work during his summer vacation to gain experience. His memory, therefore, is certainly more dependable than that of a few laborers who had no particular interest in their work or the work of others about them. The fact that Tatterson's father, who was one of the big stockholders in the building (R. 253, Qs. 49-51), failed early in 1907, and that Tatterson was compelled to leave college, come home, and go to work, would certainly make the developments of this period fix themselves forever in his mind.

In view of all the circumstances of the case, including the ownership of the Smith patent by the plaintiff company, the suit on it in Cincinnati (in which it was doubtless hoped it would be sustained as a pioneer patent) and in view of the further fact that *plaintiffs'* attorney, eleven years after this Lynnhaven job, was able to find two witnesses, Tatterson and Preston, who *did recall* this 1906 apparatus, but those affidavits were not wanted at the time, we submit that plaintiffs, in a court of equity, are hardly in position to deny this use.

ST. LOUIS COLISEUM BUILDING, JULY-OCTOBER, 1908.

The concrete distributing apparatus used on this building was also devised by Arthur L. Smith as a further elaboration of his Norfolk apparatus used in 1906-1907. After his work on the Vinery Building in 1907, Smith went to New York with the Fuller Company for a short time and from there to St. Louis, on a vacation trip. While there he saw an opportunity to further develop his concrete distributing apparatus in connection with the proposed St. Louis Coliseum and he accepted employment with a contractor named Gray. The proposed apparatus was explained to Gray and permission given to construct it. It proved to be a complete success. (R. 223, Q. 75.)

The Coliseum was a peculiar structure having an oval shaped concrete and steel balcony running completely around it and constructed as a series of steps or tiers. These steps on a steep slope would have made it very difficult to have used the ordinary wheelbarrow method of distribution.

The apparatus designed and built by Smith is illustrated in the accompanying halftone reproduction of the original photograph, Exhibit 22, taken by Eugene Taylor, August 27, 1908. Other photographs showing the progress of the work constitute Exhibit 3, four pages of halftone cuts taken from a catalogue of the Gray Construction Company, St. Louis, entitled "Buildings of Character."

This Coliseum apparatus comprised the complete combination of the claims in suit, i. e.: (1) a tower, (2) a hoist, or automatic dumping bucket, (3) a hopper, (4) a chute, (5) a horizontally movable boom for the chute. The horizontal boom was pivoted at the top of the tower and therefore did not have to be raised as it was located initially at its maximum height. The hopper was raised during the progress of the work as will be seen from the progress photographs.

Smith describes the operation of the boom as follows (R. 223, Q. 77):

"It was operated on what you might term a turn table as I found it more applicable for this class of work. The boom was so arranged and attached to the spouts that you could lift them at any angle and swing them around at any angle by means of a block and fall."

This apparatus, as stated before, was constructed in July, 1908, and used in August, 1908, more than five months prior to the filing date of the Callahan patent, January 21, 1909. It embodied all five elements of the counts in suit and in addition, the hopper was vertically

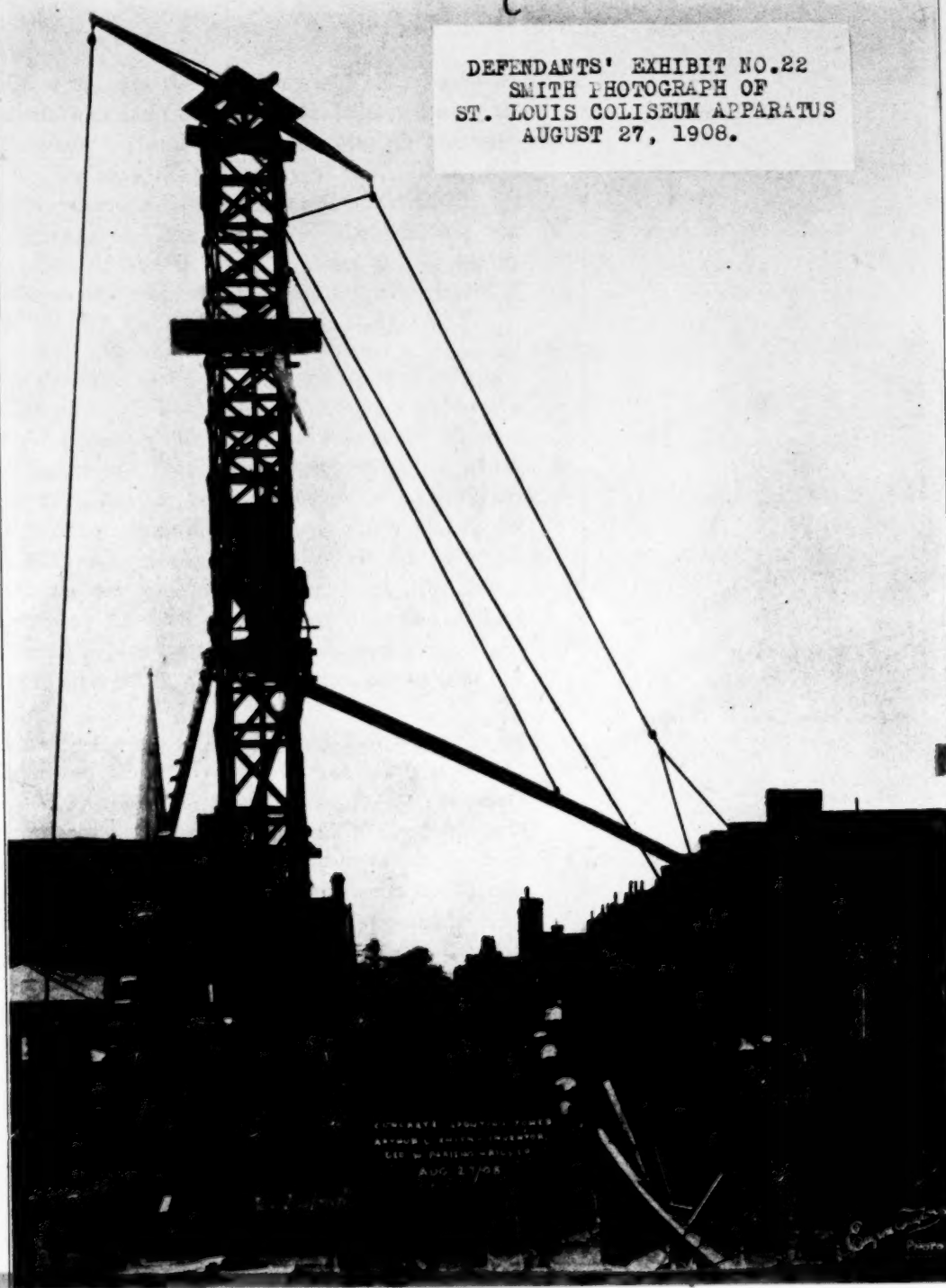
adjustable, a limitation found in claim 5 only. The other adjustment in this claim, *i. e.*, the vertical adjustment of the boom was not practiced in this apparatus because it was not required. Smith testified, however, that the vertical adjustment was part of his original conception (R. 226, Qs. 98-103), and, of course, this detail was old at that time.

As a single specific example, we refer to the McGraw Building, New York, an eleven story structure built in 1906 and 1907 (R. 147, Q. 18). Four booms, each 75 feet long, were mounted on the four corners of the temporary construction tower, these booms being raised from time to time as the building progressed. The booms were used to raise and swing buckets of concrete in addition to picking up other material. The apparatus is described in the Transactions of the American Society of Civil Engineers, June, 1908, and published earlier. Other typical examples are referred to throughout this brief.

The photographs, Exhibits 3 and 22, were produced from *two sources*, St. Louis and Washington, and were all fully identified by Eugene Taylor, the photographer whose stipulated testimony is found on page 385 of defendants' record.

His testimony is that the Coliseum, to his knowledge, was erected during July, August, September and October, 1908; that he took the photographs, Exhibit 3, pursuant to a contract with the Gray Construction Company to take a picture each week and that he took the picture, Exhibit 22, at the request of Arthur L. Smith and put on the negative shortly after it was developed, the wording and date appearing thereon.

C
DEFENDANTS' EXHIBIT NO.22
SMITH PHOTOGRAPH OF
ST. LOUIS COLISEUM APPARATUS
AUGUST 27, 1908.



In addition we have the testimony of F. M. Woodward (R. 136), who saw the Coliseum several times during the course of its erection and who identified the photographs, Exhibit 3. We have the testimony of S. C. Black, who also saw this concrete distributing apparatus (R. 352, Qs. 46-48). Herman A. Banks testified the building was built in 1908 (R. 362, Q. xxxiv). John W. Goebel inspected the concrete apparatus casually as he passed in the street (R. 381, Qs. 98-95; R. 384, R-D. Q. 122).

We also have the testimony of Smith's patent attorney, James L. Hopkins (R. 369), who understood when he prepared the application that the apparatus had been used at the Coliseum and that it had been dismantled at the time, the work having been finished. In addition we have the Smith preliminary statement executed July 28, 1909 (R. 637), specifically mentioning the Coliseum together with the Smith patent drawing, filed in the Patent Office, February 23, 1909 (R. opposite page 644), which was obviously copied by the draftsman from the Smith photograph, Exhibit 22, as to the main structural features.

Plaintiffs, in their brief, touch very lightly on the St. Louis Coliseum. Obviously, there is very little that they can say. They relied on this defense in the Canadian suit, the invention was owned by them, the apparatus in its essentials is disclosed in the Smith patent, is illustrated fully in the five photographs offered by defendants, and is proved beyond a reasonable doubt to have been used in August, 1908. In fact, it is not disputed.

This defense, therefore, shifts the burden of proof to the plaintiffs. It is incumbent on the plaintiffs to prove an earlier date of invention by the *same weight* of evidence as was required of defendants in proving this Coliseum use. We call attention to the following decisions:

Smith and Griggs Manufacturing Company v. Delia Sprague, Admrx. of Leonard A. Sprague, deceased, 123 U. S. 249, Nov. 14, 1887, where the court says:

“In considering the evidence as to the alleged prior use for more than two years of an invention, which, if established, will have the effect of invalidating the patent, and where the defense is met only by the allegation that the use was not a public use in the sense of the statute, because it was for the purpose of perfecting an incomplete invention by tests and experiments, the proof on the part of the patentee, the period covered by the use having been clearly established, should be full, unequivocal, and convincing.”

In *Webster Loom Co. v. Higgins*, 4 Ban. & A. 88, the court (at page 98) says:

“The burden of proof rests upon the defendants, to show, beyond a fair doubt, the prior knowledge and use set up; but, where they have sustained that burden by showing such knowledge and use prior to the patent, the burden of showing the still prior invention claimed, by at least a fair balance of proof, must rest upon the plaintiff.”

In *Westinghouse Electric & Mfg. Co. v. Catskill Illuminating & Power Co.*, 121 Fed. 831 (C. C. A., Second Circuit, February 25, 1903), the court says:

“This printed publication is such a disclosure of the subject-matter of the patents in suit that, if prior thereto, it would constitute an anticipation.”

“To support the burden thus cast upon it of proving to the satisfaction of the court that the supposed inventions in suit were made prior to April 22, 1888, complainant has introduced a photograph and the evidence of two witnesses, Messrs. Brown and Page. One of said witnesses has testified that said photograph represented a motor which was in Tesla's shop in the fall of 1887, and in which the difference in phase was secured by the introduction in one of the circuits of a coil having self-induction. There

is nothing in the photograph, however, to indicate the means by which said motor was operated, nor whether it was adapted to receive a single or double current from the generator. Its construction is at least as suggestive of use in connection with the earlier polyphase as with the later split phase patents. We are therefore confined to a consideration of the testimony of said two witnesses."

After considering the testimony the court stated as follows:

"This evidence is clear, direct and persuasive as to a disclosure by Tesla of various schemes for operating motors on the split phase principle. But it falls far short of the requirement in such a case.

"The burden which rested upon the defendant in the first instance has been transferred to the complainant, and it must furnish the court with convincing proof that the anticipation has been anticipated. *Westinghouse Electric & Manufacturing Company v. Saranac Lake Electric Light Company* (C. C.), 108 Fed. 221 222. *Clark Thread Company v. Willimantic Linen Company*, 140 U. S. 481, 11 Sup. Ct. 846, 35 L. Ed. 521. It is to be noted that this testimony relates to events which occurred 12 years before."

To the same effect are the following cases:

St. Paul Plow Works v. William Starling, 140 U. S. 404.

Brooks et al. v. Sacks, 81 Fed. 403.

Westinghouse Electric & Mfg. Co. v. Saranac Lake Electric Light Co., 108 Fed. 221.

Torrey et al. v. Hancock, 184 Fed. 61.

Crone v. John J. Gibson Co., 237 Fed. 637.

Clark Thread Co. v. Willimantic Linen Co. et al., 140 U. S. 481.

Rogers v. Fitch, 81 Fed. 959.

New England Motor Co. v. B. F. Sturtevant Co., 150 Fed. 131.

AMERICAN THEATER BUILDING, ST. LOUIS, MISSOURI.

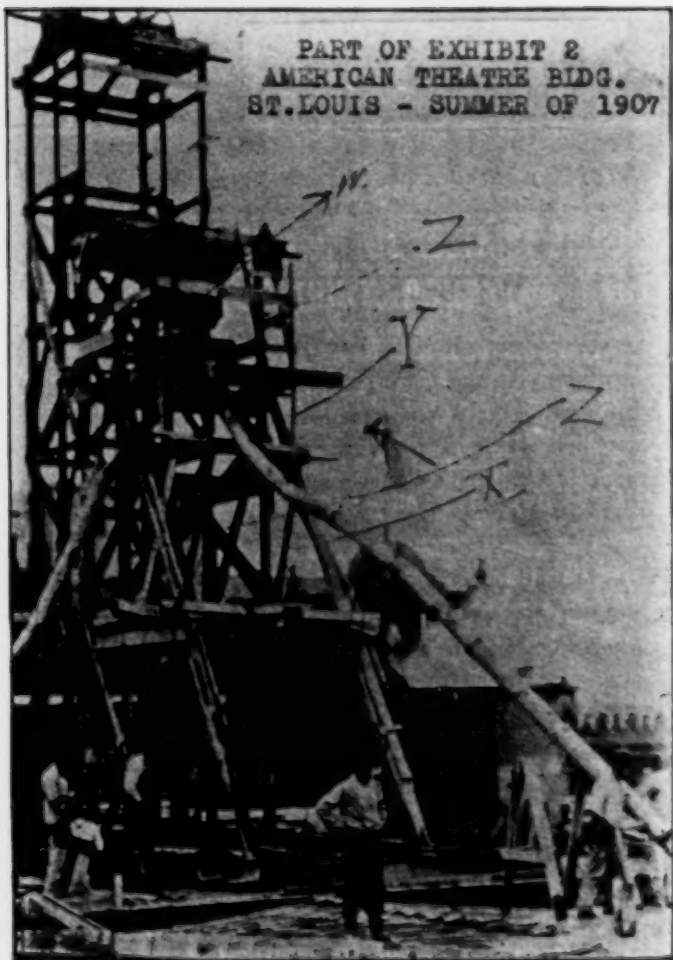
This building was a twelve story steel frame structure encased in concrete. The building was begun in the early summer of 1907.

Throughout practically the entire work of construction, the concrete was distributed through a line of jointed pipes after being hoisted by a hoisting bucket and discharged through a hopper communicating with the upper end of the pipe line. The pipe sections were suspended from the steel framework of the building and moved about to enable the workmen to discharge concrete over the entire floor area the lower section of the pipe being swivelled to permit it to swing around to facilitate this distribution. The hopper was raised from time to time.

The apparatus, on the top floor, is shown in Photographs Exhibit 2, and by a memory sketch of Woodman, Exhibit 4. The time of the erection of this building is established by Exhibit 33, the blue-print from the architect's office bearing date of June 8, 1907, written on the tracing by witness S. C. Black at the time, and by Exhibit 1, a reproduction of a page of the St. Louis Republic of February 16, 1908, announcing the completion of the building and describing the construction work, including the use of chutes for the concrete. Other exhibits, later referred to, also establish the date in addition to the testimony of half a dozen witnesses.

The concrete distributing apparatus was devised by Herman A. Banks, who was employed by the Gilsonite Construction Company from 1897 to 1908—see deposition, beginning page 359, including the witness' deposition in the Canadian suit, copied into this record (pp. 360-362). This witness was a witness for Insley about

PART OF EXHIBIT 2
AMERICAN THEATRE BLDG.
ST. LOUIS - SUMMER OF 1907





the winter of 1914-15 in said Canadian suit, and testified regarding this American Theater Building defense on behalf of the said Insley, one of the plaintiffs herein.

Bankes' testimony, briefly, is to the effect that he conceived the scheme of using a tower, hoist, hopper and chutes supported from a swinging boom, in the spring of 1907, while he was employed in the erection of the Ely-Walker Building, St. Louis, superintending the concrete work, and that he proposed that this apparatus be used on said building, but was not allowed to try it, as the building, which was of reinforced concrete construction, was too far advanced. He made a sketch of this proposed apparatus at the time, and submitted it to those in charge of the work. The sketch was not preserved, but was clearly recalled by the witness John W. Goebel, who reproduced its essential features from memory as Exhibit 37.

An examination of the sketch and of the testimony shows that the improvement consisted merely in adding a boom and a chute to the existing apparatus. On page 360, Qs. XI-XIX, the witness explained that the concrete distributing apparatus used on the Ely-Walker Building comprised a hoist, bucket or skip which was hoisted in the tower and dumped into a receiving hopper, which delivered it into the wheelbarrows. This, it will be noted, was in accordance with the prevailing practice at the time. Bankes explained that it took twenty-five men to take the material (concrete) away as fast as it could be mixed and that they had only six men below putting it into the mixer, "and we thought the chutes would do away with a lot of labor and cut down expenses. I drew up a plan to hang a boom and chutes from the tower, submitted to the company, and they didn't want to spend the money on that job, as it was over half done."

When Bankes was transferred to the American Theater Building by his employers, he adapted his proposed apparatus to the conditions there at hand, and as it proved entirely successful it was used throughout the erection of the building. The American Theater Building, however, having a *steel frame*, to be *encased* in the concrete, instead of being *reinforced* concrete construction, the erection of the steel frame was necessarily considerably in advance of the placing of the concrete which was to encase the steel members, and it was therefore neither practical nor necessary to use a boom for supporting the pipes to swing them around. The steel skeleton afforded a ready means for supporting the pipes by merely fastening them temporarily by wires or ropes to the nearest overhead beam, whereby the pipe line could be extended in almost any direction and could be moved sufficiently for the swiveled end to reach any part of the floor area.

This concrete distributing apparatus occasioned considerable interest in St. Louis and was observed by a number of outside parties, among them Andrew W. Woodman, of Chicago, who testified regarding his recollection of the apparatus. It was also commented on in the St. Louis Republic, Exhibit 1, as "A Novel Feature," a paragraph of the full page article being devoted to the novel and quick manner in which the concrete was hoisted and distributed "by means of chutes."

This publication appeared more than a year earlier than Callahan's filing date and the apparatus itself was used for a year and a half prior to said filing date and a half a year ahead of the earliest date of invention claimed by Callahan or on his behalf.

Bankes also testified that he superintended the construction of the Baden reservoir in St. Louis, which he thought was built in 1905-6, although another witness,

Goebel, whose memory seemed to be quite accurate throughout his testimony, stated it was built in 1903, the year prior to the St. Louis World's Fair in 1904. During part of this work the concrete was distributed through chutes, that is, wooden troughs resting on horses, forming a line having a maximum length of 240 feet, according to the testimony this witness gave on behalf of Insley in 1914 (R. 360). The chutes were moved to vary the point of delivery, particularly the last 16 foot section, which could be swung around (R. 365, Q. 49). In this respect the method was obviously similar to what had been used on the Ingalls Building in Cincinnati in 1902, except that the concrete mixer rested on the bank above the reservoir instead of being erected at the foot of a tower with a hoist in it.

Bankes produced the photographs A and B comprising Defendants' Exhibit 2, and testified that these were the identical two photographs produced during the Canadian deposition about six years earlier, reproductions of which were offered in evidence in that suit. The original photographs had been in his possession ever since (R. 363, Qs. 10-16).

This exhibit also includes a photograph of the Tootle-Campbell Building, St. Joseph, Missouri, produced by Bankes with the explanation that it was sent to him in 1908 by a man in St. Joseph and that he had had it ever since (R. 363, Qs. 19-25). These four photographs were produced in the summer of 1920 by the witness when interviewed, and were reproduced and filed in opposition to the preliminary injunction motion. The witness, however, refused at the time to sign the affidavit in explanation of said photographs.

Bankes was asked why he did not apply for a patent on his American Theater apparatus and replied, "At the time I didn't think it could be patented." He also

stated that he did not have the money to start with (R. 367, Q. 77).

Bankes, as a former witness for the plaintiffs, was a hostile witness for defendants, which is evidenced by the fact that he refused to sign an affidavit in the summer of 1920 confirming his early testimony on behalf of plaintiffs, which affidavit was to have been filed in court and was, in fact, filed unsigned with an explanatory affidavit of counsel. The witness also refused to appear, in 1921, when first subpoenaed by a notary public and had to be subpoenaed a second time, several days later, by a U. S. Marshal (R. 359, Qs. 2-4). His animosity was further evidenced by the volunteered statement at the close of his testimony on page 368.

J. W. Goebel, another witness, called by defendants (R. 372), previously testified on behalf of the defendants in the Canadian suit, *Concrete Appliances Company v. Rourke et al.*, 3287, 1913. Mr. Goebel testified that he was president of the J. W. Goebel Contracting Company, St. Louis, and had been assistant manager of the Gilsonite Construction Company during the building of the Ely-Walker Company Building at 17th and Locust Streets, St. Louis. He had been acquainted with Herman A. Bankes and he described the apparatus used for elevating the concrete on the American Theater Building in 1907. He credited Bankes with this apparatus (R. 373, Q. 12). He was also familiar with the chutes used at the Baden reservoir in 1903, which was built by the Gilsonite Construction Company. He described the concrete distributing apparatus used in erecting the Ely-Walker Building, as the usual apparatus with a hopper which was raised from floor to floor on the tower to a maximum height above the top or eighth floor

(R. 375, Qs. 30-32, p. 378, Qs. 56-61), but testified that (Q. 35):

"During the construction of the Ely-Walker Building, Bankes came into the office one day with a sketch showing a method by which he proposed to spout or chute the concrete into position instead of wheeling it. He proposed to do this by means of chutes suspended from a derrick which could be swung from side to side and raised or lowered as may be required.

"(Objection omitted.)

"Mr. Jones: Q. 36. Did you see the sketch?

"A. Yes, Bankes showed it to me. It was made on a piece of yellow sketching paper."

He stated on cross-examination that he saw the sketch when Bankes brought it in and that it lay on his desk for quite a long time, also that he remembered "very distinctly he (Bankes) came in one day and asked for it" (X-Q. 96). The witness made a sketch (Exhibit 35) reproducing the Bankes sketch, as well as he could recall it. He recalled the general features, but, of course, not the details (R. 376, Qs. 41, 42). He referred to the proposed apparatus as a derrick consisting of a mast and a boom, the mast in this case being the tower. He also confirmed Bankes to the effect that the building was so far along it was decided not to use the new apparatus.

The concrete work on this Ely-Walker Building was done in the spring of 1907 and finished about July, which was not only the recollection of the witness, but the dates were established by progress photographs in a book of James Stewart & Company, the dates showing in said book being stipulated in the record (p. 385). The witness testified that the concrete work on the American Theater Building was begun about July, 1907, the foundation having been put in prior to that time and probably prior to May 10, 1907, the date on Blue-Print Exhibit 33, which showed a plan of the building (see R. 377).

The hopper on the tower was generally two, three or four floors above the floor where the concrete was being deposited (R. 378, Q. 62) and the witness testified that in *every* case where a hopper was used, there was always a man to open and close the gate at its lower end to regulate the flow of concrete (R. 380, Q. 85). The witness was quite familiar with the apparatus, as he visited the building about once a day (Q. 70). He explained that Bankes did not use the boom shown in the earlier sketch, as it was not necessary, "Because we had the steel beams to support these chutes with." The witness also testified that "Quite a number of people visited the building, while we were using these spouts for concrete, the builders, architects, material men and others interested in building industries" (R. 379, Q. 71). He recalled one particular discussion "About it being an economical method of placing concrete, something that we thought was brand new that had never been used before" (R. 379, Q. 73).

The witness testified that, since that time in 1907, he had used apparatus of this general character beginning immediately, that is, the following year, 1908, on the Tootle-Campbell Building, St. Joseph, Missouri. He stated that in this period from 1907 to the present day, his company had used chutes supported in various ways, principally by cables fastened to the top of a tower and reaching the floor, the chutes being suspended from the cable by block and tackle. The witness personally has also used chutes supported on trestles, but has never had occasion to use a boom, stating that a boom was used "In a place where you couldn't very well anchor your cable to support the chutes" (R. 380).

The Tootle-Campbell Building was built in the summer of 1908 at St. Joseph, Missouri, by the apparatus

just described, that is, a tower, hoist, hopper and chutes supported from cables. The witness personally visited the building about once a month. Dated photographs of the apparatus are in evidence as Defendants' Exhibit 14.

The witness also passed by the St. Louis Coliseum several times during its erection and testified that "They had a tower and a mixing machine and spouting" (R. 381, Q. 94).

The witness was asked on cross-examination if, in making his sketch reproducing the Bankes sketch, his recollection may not have been modified by structures which he had seen in recent times, to which he answered (combining answer X-Q. 113 and R-D. Q. 124):

"There is a possibility of that, but every time that I saw the evolution of the system of handling concrete in structural reinforced buildings as we used it in the beginning and today, I always thought of the scheme that Bankes proposed, in that it seemed to bear out his idea."

Samuel C. Black, another witness familiar with the erection of the American Theater and Hotel Building, testified, beginning page 348, that he was with the Board of Education of the City of St. Louis in the building department, and that in 1907 he had been employed by F. C. Bonsack, the architect of said American Theater Building. He described the apparatus, including the hoist, hopper and pipes (R. 348). He also made a sketch, Exhibit 32, to illustrate his recollection of the apparatus. He was quite sure that the concreting was begun within a few days after June 8, 1907. He testified that they were trying to expedite matters as much as possible and the minute the contract was signed they were requested to get to work at once, which they did (R. 354, X-Qs. 66-70). The witness testified that the concrete distributing appa-

ratus was the invention of Herman A. Bankes, who by other equipment he had devised, especially in the control of cars used to carry the material to the mixer, "showed himself to be a very ingenious man." (R. 349, Qs. 11-19.)

The witness stated that he was greatly interested in this apparatus on account of its ingenuity and efficiency and that there was quite a bit of favorable discussion about it (R. 351, Qs. 35-37). He also stated that apparatus similar to it had been used almost continuously from that time to this with various changes, also that there were no special restrictions with reference to excluding the people from the work other than was usual on such buildings. The inference is that anyone could see the apparatus who wished to, particularly as it was readily visible through the open framework before the latter was enclosed within its walls and there was nothing to prevent knowledge of it being spread broadcast (R. 351, Qs. 38-41).

The witness also testified that the hopper was attached to the tower and was moved from time to time, that is, moved about every three floors (R. 350, Qs. 24, 25; p. 353, X-Qs. 62, 63), and that sufficient water was used in the concrete "to make it flow freely in the spouting" (R. 352, Q. 45). The photographs in Exhibit 2 show the hopper supported only in part on the tower and partly on the roof, but this is an immaterial detail, as the claims in suit do not state how the hopper shall be supported, and furthermore the standard practice at that date (1907) was to bolt the frame of the hopper to the tower and then raise it from time to time with a block and tackle, after unbolting it, permitting it to be bolted in some higher position.

The witness produced a dozen tracings from the office of the architect of this building, one of which being a tracing, Exhibit 33, previously referred to, and identi-

fied his handwriting thereon, where he had filled in the dates of several contracts, including the date of June 8, 1907. He also produced a book (R. 356) labeled "Contracts," pages 76, 77, of which were records of the contracts for the different portions of the work on this building, including an item under date of June 8th, for \$55,000.00, as the principal contract of the Gilsonite Construction Company. Although the witness was not personally familiar with these entries, he recognized the names of practically all the contractors whose names appeared on these two pages, as having been connected with the work. He was also familiar with the handwriting of the stenographer in the architect's office, who had made the entries, and had seen the book as early as 1907. The witness also identified Exhibits 3, 22 as pictures of the Coliseum Building, the construction of which he had noticed at the time (R.352, Qs. 47, 48). He had also seen concrete distributing apparatus used by E. C. Gerhard in the erection of some of the public schools in St. Louis, including a steel boom, which he noticed particularly, although he gave no date as to this latter apparatus (R. 352, Qs. 55-57).

F. C. Bonsack, an architect, was also called as a witness. He is a son of F. C. Bonsack, deceased, the architect of this building. He located the tracings which Mr. Black discussed during his testimony, stating that he found them in the files of his father. He made a search for further photographs which he said had been taken during the erection of this building, but was unable to find them, as they had apparently been lost when he went into the Navy, due to the fact that several large boxes of records had been moved to another warehouse while he was away, and had broken open and many of the pictures and other records lost. He also identified the contract book

as one kept as an office record. He also inquired of the commercial photographer, but was unable to produce the plates from which the lost photographs had been taken.

Fount M. Woodward, beginning page 1, stated that he was employed on this American Theater Building during its erection, being superintendent of the Roebling Construction Company, which did the concreting, furring and lathing. He described the apparatus in considerable detail, stating that when they poured the mezzanine floor of the hotel the concrete was carried through chutes, a distance of 60 feet. He understood that Bankes was responsible for the apparatus. When he asked Bankes on the work how long he had had the idea, Bankes stated, "I have had it quite a while, but you know how hard it is for us fellows to tell the people in the office anything." (R. 134, Q. 35.) He also talked it over with the engineer of the Roebling Company and with the estimator for the Gilsonite Construction Company and asked if it had been patented, but was told by the estimator that it had not, and that "the idea was as old as the hills." The witness also stated that wet or "sloppy" concrete was used on this work, and that up to that time the engineering profession as a rule objected to wet concrete (R. 133, Q. 23). He also testified that he told Mr. Andrew W. Woodman, of the Chicago office, about this apparatus, and on his next visit to St. Louis he inspected the apparatus (R. 133, Qs. 20, 21). The witness also described briefly the concrete distributing apparatus comprising a high tower, hoist, hopper and chutes used in the erection of the St. Louis Coliseum in 1908 (R. 136, Qs. 45, 46).

Andrew W. Woodman, civil engineer, of Chicago, confirmed Woodward's testimony to the effect that he, Woodman, visited the American Theater Building while it was

under erection in the "open building season of 1907." He made a sketch of the apparatus, Exhibit 4, showing pipes on a slope, which according to some of the other witnesses was a little too steep. However, the sketches of these various witnesses agreed as to the main essentials, *i. e.*, the tower, hoist, hopper and pipes supported from the steel framework. The witness stated that he saw the concrete being carried through the pipes for a distance of from 60 to 100 feet and that there was a swivel joint on the last section of pipe enabling it to be swung around (R. 139, Qs. 6, 7; R. 143, X-Q. 35). The witness also referred to the gradual evolution from dry concrete to wet concrete (R. 141-142), and stated that the increased water was due to the reinforcing bars in the steel. The witness also had heard of a fifteen or sixteen story reinforced concrete building in Cincinnati some years before (undoubtedly the Ingalls Building) and remembered the discussions at that time with reference to it.

Henry O. Webb was another witness who was employed on the American Theater Building. He was with the Gilsonite Construction Company as foreman of the concrete work. He said Bankes was responsible for the use of the chutes and "was a fellow always of ideas of placing concrete with chutes and compressed air" (R. 179, Q. 12). He made a sketch of the apparatus, Exhibit 13, and also described it in considerable detail, including the movable lower end of the pipe line (R. 181, Q. 29). He identified the photographs, Exhibit 2, as well as the photograph of the Tootle-Campbell Building. He also stated (R. 182, Q. 48), "Practically ever since the American Theater was built I have followed nothing else but reinforced concrete; and on practically all the jobs we use the chutes." He also stated he was working at present on a factory for Bunte Bros., in Chicago, to cost between two million and

two and a half million dollars, in which they were chuting the concrete from a big tower through chutes suspended from a cable over two other towers, a distance of over 275 feet, also another line of chutes running a distance of 250 feet, after which the concrete flows to receiving hoppers and is then permitted to flow to individual buggies and is wheeled by the workmen to the forms and dumped in.

This illustrates the fact, brought out elsewhere in the record, that chutes supported from a boom have a limited use, due to the comparatively restricted area that they are able to cover, chutes hung from cables being used on the larger jobs and in many cases the concrete being dumped from buggies by the workmen, as it was about twenty years ago, for example, on most of the floors of the Ingalls Building at Cincinnati, the first tall reinforced concrete structure in the United States. This witness also referred to the change from dry to wet concrete, and the fact that even in 1910 at the Great Lakes Naval Training Station (near Chicago) the government favored dry concrete and he had some difficulty in getting the permission of Admiral Ross to use wet concrete (R. 182, Q. 47).

The witness identified three photographs of the Tootle-Campbell Building, St. Joseph, Missouri, dated August 14, 1908, August 29, 1908, and October 16, 1908, and identified it as the same building shown in one of the photographs, Exhibit 2. The witness was employed by the Gilsonite Construction Company on this work and described the apparatus as consisting of a tower, hoist, hopper with chutes hung from cables by a block and tackle and moved about sufficiently to reach the entire floor area on the successive floors.

This American Theater Building marked the beginning of a continuous period of the use of chutes in the erection

of buildings in St. Louis. In fact, if we include the logical predecessor of this building in Norfolk, Va., on which chutes were used in 1906, it may be said that the Lynnhaven Hotel in Norfolk marked the beginning of continuous use of chutes on tall structures throughout the United States, the American Theater Building having been built with chutes hung from a steel framework in 1907, the St. Louis Coliseum having been erected in St. Louis with chutes hung from a boom on a tower in 1908, the Sumner High School in St. Louis having been built by the use of chutes hung from a cable in 1909, and the Tootle-Campbell Building, St. Joseph, Mo., having been built using chutes hung from cables from a tower in 1908. In 1910 the Great Lakes Dredge & Dock Company, of Chicago, begun using pipes hung from two booms on a tower, followed shortly thereafter by widespread use on both land and water.

Plaintiffs claim the first use of pipes on the Majestic Theater Building, Los Angeles, in January, 1908, the photographs in evidence showing the pipes supported on wooden framework, and plaintiffs claim the use of pipes supported from a boom in the fall of 1908, on the Timken Building, San Diego, followed by extensive use on the Pacific Coast. Insley, one of the plaintiffs, claims to have begun the use of such apparatus about 1910 (several years before becoming a licensee of the other plaintiff, the Concrete Appliances Company), and since 1910 there has been widespread and continuous development in the use of apparatus of this character.

TOOTLE-CAMPBELL BUILDING, ST. JOSEPH, MISSOURI, SUMMER OF 1908.

George W. Herthel, vice-president of Selden-Breck Construction Company, St. Louis, Mo., testified that his company was the general contractor for this building and sublet the reinforced concrete to the Gilsonite Construction Company. He testified that in addition to their records of this work, such as reports, contracts, sub-contracts, and so forth, they took regular progress photographs of the building, which had been in their files ever since, and he produced from his files three photographs, duplicates of which are in evidence as Defendants' Exhibit 14.

The Jones deposition (R. 386), shows that an effort was made to obtain the original plates from the photographer, but he had gone out of business and the plates were not available.

Herthel visited this building three or four times during its construction in 1908. The earliest photograph, part of Exhibit 2 (undated), was said by the witness to have been taken in the latter part of July, 1908; the other three photographs referred to are dated August 14, 1908, August 29, 1908, and October 16, 1908, respectively.

The witness described the apparatus in answers to questions 11-13. He stated briefly the chutes were suspended from one or another of several cables radiating from a tower in order to reach the entire floor area and the hopper was raised as the work progressed. The witness pointed out that the same problems are not found on any two buildings, that the shape of the buildings, the surroundings and the outfit a contractor happens to have, all determine the type of apparatus used in distributing concrete. In some cases, at the present day, the chutes are swung from overhead guy lines, or supported by boom

derricks, or placed on trestles and combinations of the three are also used. He also explained that where the work is not great enough to justify the expense of putting up a rig of this character, "you would naturally handle it in another manner, such as by labor and wheelbarrows." (See R. 333-334.)

This St. Joseph apparatus was also referred to by Webb, who was employed on the work, as elsewhere pointed out, and by Goebel, who visited the building about once a month.

In addition to the undated photograph, taken presumably in July, 1908, two of the photographs of this building (in Exhibit 14) are dated in August, 1908, five months prior to Callahan's filing date and two months earlier than the date he alleges for the use of the Timken Building apparatus. In view of the fact that Callahan in discussing his Canadian testimony, practically admitted that a cable was the equivalent of a boom for supporting chutes, we contend that even in the absence of any other defenses, this Tootle-Campbell Building apparatus is enough to invalidate the claims of the Callahan patent, on the ground that no invention whatever was involved in selecting the boom as a substitute for cables as a support for the chutes.

SUMNER HIGH SCHOOL, ST. LOUIS, MISSOURI.

This High School, known as the Colored High School, was built by Pelligreen Construction Company, the contract having been let September 8, 1908, and final payment made March 3, 1911, as shown by a stipulation in the Record, pp. 110-111.

Robert H. Hughes, a witness for defendants, testified regarding the use of chutes hung from a cable extending from a tower and used in building this school (R. 486).

He gave the date as the spring of 1908, from memory, but probably meant the late fall of 1908, instead, as inquiry at the Board of Education disclosed the dates which were embodied in the above-mentioned stipulation. Judging by the speed with which the excavations have been made and foundations put in in other buildings referred to in the testimony, and in view of the mild fall weather in St. Louis, this apparatus was doubtless in use before the end of 1908, somewhat earlier than Callahan's filing date.

Hughes testified that he was employed on the American Theater Building in 1907, after which he was employed on this Sumner High School. He also saw the Coliseum under construction, but did not pay much attention to it.

FRANKLIN SCHOOL, ST. LOUIS, MISSOURI, 1909.

Defendant's witness, Edward C. Gerhard, testified, beginning R. 335, that he is the president of the E. C. Gerhard Building Company, St. Louis; that he built the Franklin School and the Clark School, among other buildings. Exhibit 31 is a photograph, dated May 7, 1910, showing concrete distributing apparatus used on this building. It comprises a tower, hoist, hopper and stiffened or trussed wooden chutes supported by block and tackle, its lower end being supported by a high trestle, with additional chute sections extending therefrom. It is stipulated on page 556 of the Record, that if the witness were recalled he would testify that the contract for this school was let June 28, 1909, and that the apparatus in the photograph was put into use in the building operations prior to January 1, 1910.

Gerhard's company and the Board of Education were sued for infringement, because of the use of this apparatus, by Concrete Appliances Company, the bill of com-

plaint being filed February 23, 1910, on the identical claims of the Callahan patent in suit. As the patent only issued February 8, 1910, the plaintiffs lost no time in using this patent as a club, an inference which we believe to be justified in view of the large number of suits which were started but were never prosecuted if the defendant showed any sign of making a real contest. (See suits identified by petitioners' attorney on page 345.) Exhibit 65, a certificate of the Clerk of the Court, in St. Louis, shows that an answer was filed in April, 1910, and the cause was dismissed for want of prosecution September 19, 1911. Gerhard testified (R. 337, Q. 26) that his knowledge of the American Theater Building apparatus "came out in the defense we were preparing" in this suit. He was not familiar with the American Theater Building concrete distributing apparatus except by "hearsay" and considered that his own apparatus was original with him. Although the date of use of this Franklin School apparatus was not early enough to constitute a defense, it is, nevertheless, further evidence of an independent conception and use of the apparatus by another party. We are relying on it, in conjunction with a large number of similar cases, in support of our contention that where so many independent contractors and engineers, widely scattered throughout the United States, and without knowledge of each other's work, within a comparatively short period of time constructed substantially the same type of apparatus, representing an advance over previously used structures, such numerous instances are *very persuasive* that some underlying development in the art, such as wet concrete, for example, had suggested this improved apparatus, and that no invention is involved in the selection and use of the most appropriate equipment available.

Gerhard also testified regarding the use of similar ap-

paratus on the Clark School at an earlier date, 1906, but there is considerable doubt as to such use and defendants, after investigating further, stipulated that Mr. Itner, the architect for the School Board, would testify that he saw no such apparatus on the Clark School in 1906.

WEBBER DAM, NEAR LYONS, MICHIGAN, 1906.

The deposition of Wm. G. Fargo (R. 494), and the stipulated testimony of Horace S. Hunt (R. 500), of the present record, are to the effect that Mr. Fargo is a civil engineer, head of the Fargo Engineering Company, of which Mr. Hunt is vice-president, that in 1906 these parties built a dam near Lyons, Michigan, the concrete being discharged from tip cars on a trestle along the sides of which were metal hoppers, from which inclined pipes led to the forms. Photographs of this equipment in several different forms are in evidence as Exhibits 54, 55 and 56. The dates are fully established by shop orders. Although no boom was used, the testimony is of interest as showing that engineers who were familiar with developments in the grain art at that period, 1906, would consider the distributing apparatus in the two arts as analogous, and not entirely unrelated, and would naturally consider grain spouts for distributing concrete. The testimony shows that in ordering this equipment, a letter dated June 13, 1906, called for a construction similar to that shown on page 463 of Shannon & Company's catalogue for grain distributing apparatus (R. 598), the apparatus being the same as that shown on page 201 of the Webster Manufacturing Company's 1901 catalogue, Exhibit 12. The apparatus also included a very simple swivel joint between the hopper and pipe of the type used in the grain art, which permitted a complete circle of

movement (R. 496, Q. 21), and was entirely successful when used with concrete, thereby showing that grain swivels could be used for concrete without any change or adaptation whatever, and would naturally be used if the particular work called for them.

Mr. Fargo wrote several articles in 1905, 1906 and 1907 relating to this and other construction work as shown on p. 498 of the Record, some of these articles being quoted in Exhibit 64.

It developed that plaintiff Insley knew all about this defense at the time of the Cincinnati suit, although it is not in the record of that suit, the witness testifying that he had known Mr. Insley since about 1912, a year or two after which Insley called on him for information regarding his early use of concrete spouting, and that he gave him some of the same photographs, which are in evidence in this case, "and other information of like nature." This was obviously about the time of the Canadian suit, which Insley was defending.

Plaintiffs in their brief emphasize the comparatively limited range of the horizontal swing of the pipes shown in Exhibits 54 and 55. However, they could swing far enough for the purpose. Fargo testified (R. 496, Q. 21) that the flange and lug swivel permitted a complete circle of movement "except as restricted by the trestle or other supporting timbers." The remaining photograph, Exhibit 56, shows a pipe which swings through a complete circle. The fact that Fargo did not use a boom does not indicate that he failed to appreciate its possibilities under proper conditions, but was due to the fact that a boom, in a case like this, would be merely an added expense.

GREAT LAKES DREDGE & DOCK COMPANY APPARATUS DEVELOPED BEGINNING 1906, AT GARY, IND.

The Great Lakes Dredge & Dock Company built a coffer-dam for the pumping station at Gary, Indiana, in the fall of 1906, when work on the new plant of the United States Steel Corporation was just beginning. As shown in Exhibit 17, Photograph K, dated December 31, 1906, it consisted of a mixer on a car running on a trestle, a wooden hopper beneath the mouth of the mixer and steel chutes extending into the coffer-dam, secured by ropes or wires to the bracing. This apparatus was built by W. T. McCann, a carpenter, who had been with the Great Lakes Dredge & Dock Company for about nineteen years (R. 188-196).

In the spring of 1907 this concrete distributing apparatus was used in building the concrete intakes or tunnels leading to the pumping station. The apparatus was modified by the addition of a swinging boom, from which the steel chutes were suspended, so that they could be swung from one side to the other through a considerable angle. By employing additional chute sections at the lower end of the boom supported chutes a section of the tunnel 125 feet long could be poured, that is to say, the chutes would reach $62\frac{1}{2}$ feet on each side of a central position (see R. 211, X-Qs. 172-173). This boom equipped apparatus is shown in Exhibit 17, Photographs A and M.

Photograph A was taken June 19, 1907, at a time when the chutes were not being used, as that particular part of the excavation was not quite ready for the concrete. Photograph M was taken June 5, 1907, two weeks earlier and shows the actual concreting operation, the forms for the tunnel being in place and partially covered with concrete. The steel chutes were about 14 feet or 16 feet long (R. 211, X-Q. 168), and when supporting them from the

boom two of them were tied together, as shown in the photograph, resulting in a single stiff length of about 25 feet or 28 feet. The rope attached to the boom and shown in the foreground was used to pull the boom around to change the point of delivery of the chutes. The boom was added to the apparatus by Alexander Cameron, general foreman of the Great Lakes Dredge & Dock Company, assisted probably by others.

Cameron was sent to Gary in the fall of 1906 and had charge of constructing the coffer dam and intake (R. 197). When he was called as a witness, the only photograph we had found showing this apparatus was photograph A of Exhibit 17, the one showing the apparatus without the chutes, located in one of the numerous photograph albums of the Great Lakes Dredge & Dock Company. Cameron therefore made a rough memory sketch, illustrating the relation of the chutes to the boom and the car, which is in evidence as Defendants' Exhibit 18. There was an interval of more than a month in the Cameron deposition during which testimony was taken in the East and during this time photograph M of Exhibit 17 was found in the files of the Illinois Steel Company. This 1907 apparatus was used for five or six months, as shown by the testimony, and was entirely successful. Both McCann and Cameron testified that prior to the construction of this apparatus they had seen grain elevators with the grain pipe supported from a boom (see R. 200, Q. 41 and R. 199, Qs. 39, 40).

Photograph A was said by the witness to have been taken by a photographer named Christy, now deceased. photograph M was taken by A. C. Patterson, who was called as a witness (R. 319-321) and testified that he was the official photographer for the Indiana Steel Company at Gary at the time that he took photographs K, L

and M on the dates appearing thereon, *i. e.*, December 31, 1906, March 2, 1907 and June 5, 1907, respectively.

The fact that photographs A and M, showing the same apparatus, were produced from two different sources, and taken by different photographers, establishes the existence of the apparatus at the period in question beyond any doubt.

In this apparatus appears the characteristic feature of the structure in suit, that is, chutes hung from a boom for varying the point of delivery of concrete discharged from a hopper. It is true that this apparatus does not comprise a tower with a skip hoist in it. However, this feature of elevating the concrete to a hopper by an automatic dumping bucket was not only old at the time, but was standard practice, as shown by the 1906 catalogue of the Ransome Concrete Machinery Company, Exhibit 21, and the testimony of numerous witnesses elsewhere referred to. With the Ransome outfit the concrete flowed from the hopper to wheelbarrows or carts, which were wheeled by the workmen along runways and dumped. Since plaintiffs are placing great emphasis on the advantage of the boom-supported chute as displacing wheelbarrows and some of the workmen, and are also emphasizing the freedom from obstruction afforded by this chute apparatus as distinguished from plank walks or runways for carts or wheelbarrows, we call attention to the fact that this apparatus of photograph M was devised to overcome the same inconveniences, and did, in fact, facilitate the work in the same manner that it does when the concrete is deposited in building forms, as distinguished from forms in an excavation.

Cameron was asked in X-Q. 160 (R. 210) regarding the earlier necessity of supporting the lower end of the chute either on a trestle or a part of the intake forms and an-

swered in substance that such support was necessary in the case of photographs K and L, and that "we found it such hard work that we devised some other scheme, hence the boom."

The inference we draw from this and from other parts of the testimony, is that none of these employees of the Great Lakes Dredge & Dock Company considered the use of a boom with concrete chutes to be an invention, but merely an expedient to be adopted as a matter of convenience whenever the necessity arose. In some cases it was desirable and in others it was not.

Cameron testified also that he supervised the building of a scow concrete distributing plant, shown in photograph B, Exhibit 17, in the winter of 1907-1908. This apparatus, generally speaking, was similar to that used in the spring and summer of 1907, except that it was mounted on a scow instead of a railway car. It included a chute hung from a swinging boom and was used in connection with work at the Gary slip and turning basin, after which it was towed to the Illinois Steel Company at South Chicago, and was used there for further work.

Cameron says that he conceived the idea of this apparatus about the middle of the summer of 1907, when he was notified he was to take charge of the building of the concrete dock around the turning basin and slip (Q. 57). It was built in the winter of 1907 and 1908, and used beginning in the spring of 1908 (also R. 216, R-D. Qs. 214-217). Photograph B was taken somewhat later, being dated December 18, 1909, at which time this apparatus was being used on foundation work for the pumping station for the coke ovens.

The 1907 apparatus and 1908 apparatus are also identified by Stephen Creutz, Jr., assistant general foreman of the Universal Portland Cement Company, Buffington

plant, who was employed by the Great Lakes Dredge & Dock Company for a period beginning just after Labor Day, 1906. He fixed the dates of the use of the floating concrete distributor, of photograph B, by two incidents which showed that it was 1908; one was, he was married February 26, 1908, and the other was that he left the employ of the Great Lakes Dredge & Dock Company the 28th of March, 1908, after which he was an inspector for the Illinois Steel Company during the summer of 1908. He saw this apparatus during the summer of 1908.

The apparatus of this photograph was also provided at times with a counterbalanced extension or chute at the end of the main section or chute (see R. 212, X-Q. 176, and 215, R-D. Q. 205). While this is not involved as an issue in the suit, it is referred to in view of the model of a highly developed modern apparatus produced by plaintiff in open court, but not offered in evidence, which model embodied a counterbalanced chute at the lower end of the main chute, and which was referred to as originated by one of the plaintiffs, William H. Insley (R. 121, Q. 38 of Insley testimony). A similar counterbalanced section in connection with a grain spout is shown, however, in Toepfer patent 243,327, of 1881, set up in the answer, Exhibit 66. (R. 668.)

Scow distributing apparatus quite similar to photograph B was also used by the Great Lakes Dredge & Dock Company at Cleveland, Ohio, in the summer of 1908, building the dock of the Upson Nut Company. See photographs F and G, dated August 7, 1908, and also page 424 of the Engineering Record of April 3, 1909, Exhibit 25, in which publication this exact photograph is reproduced, accompanied by an article describing the work on the dock. This Cleveland development will be referred to more in detail in connection with the deposition of J. C. Alderman, of the Great Lakes Dredge & Dock Com-

pany, to show that there was no secrecy about the use of any of the early apparatus developed by said company, but that knowledge of what was being done in one city was spread rapidly to other cities in which said company operated, so that the company might have the benefit of using on all of its work, wherever applicable, the improvements developed on any one job, wherever located.

Jerome C. Alderman, of Chicago, testified (R. 281), that he was a civil engineer of the Great Lakes Dredge & Dock Company, that he had been with them since May 15, 1909, prior to which he had been with Frazier & Fox, consulting engineers, Cleveland. He was employed in 1908 in the building of a dock for the Upson Nut Company, Cleveland, the concrete work being done by the Great Lakes Dredge & Dock Company. The witness produced two photographs, F and G, Exhibit 17, showing the apparatus, which included a metal chute suspended from a boom, each dated August 7, 1908, the date being stipulated on pages 299-300 of the present record. The witness testified that as many as four additional chute sections were employed leading from the boom supported section. The apparatus is quite similar to that used by the Great Lakes Dredge & Dock Company in the turning basin at Gary (photograph B) and constructed in the winter of 1907 and 1908. This Cleveland photograph, as elsewhere stated, was reproduced in the Engineering Record of April 3, 1909, Exhibit 25.

The witness testified that he had seen tower apparatus of the Great Lakes Dredge & Dock Company similar to photographs C and D, Exhibit 17, used at Erie, Pa., by his company in the spring of 1910, and that such apparatus involved a boom supported pipe on a tower, with hopper and other equipment. This witness also explained that the company had about 100 photograph albums in

the Chicago office, and that he had seen duplicate photographs of some of the equipment in the Cleveland office, as far back as December, 1908, although he was not employed by the company at the time. He also explained that Christy, the photographer who took the progress photographs for the Great Lakes Dredge & Dock Company, had died. This early apparatus was made mostly from lumber in the yards, or second-hand lumber, other parts of the apparatus being obtained in various different ways (R. 290, Qs. 60-63). He also explained that he was unable to locate drawings of these various concrete distributing plants, explaining that the company did not make a practice of making drawings of such equipment, although as a precaution he made a search through the files back to 1907 (R. 286-287).

The witness also identified the apparatus of a number of other photographs, Exhibit 17, and discussed them in some detail. He stated that he had something to do with getting out the 1912 catalogue, Exhibit 19. The witness also testified that their apparatus had been developed from their own experience, that they were pioneers in the designing of distributing plants of this character, that none of their chutes or booms were purchased from Insley, but on the contrary the witness had "at various times taken part in conversations of various heads of our company, in which it had been mentioned that Mr. Insley had looked over equipment which we had designed and constructed, he afterwards putting on the market equipment of similar design and character." (R. 293, Q. 71.)

E. J. Fucik, vice-president and assistant general manager of the Great Lakes Dredge & Dock Company, testified by way of corroboration of much of the testimony of Alderman and other witnesses. (R. 471.)

He was graduated from the University of Illinois as a

civil engineer in 1901, and told about the use of chutes from 1902 on through a period of several years in building bridge foundations in Chicago, the chutes being supported in various temporary ways, usually in cofferdams. He also discussed the evolution from dry to wet concrete and mentioned various discussions at meetings of the Western Society of Engineers, beginning with 1902, and various papers that he had heard read on both sides of the question. (R. 472, Q. 8.) He also brought out experiments by a university professor with reference to the expansion of steel as compared to concrete, the fact that the coefficients of expansion were not so dissimilar but what steel could be embedded in soft concrete and not crack loose when the concrete hardened. In fact, the dissemination of information of this character had much to do with the tremendous present day use of reinforced concrete buildings.

In addition to referring to the continuous use of chutes by the Great Lakes Dredge & Dock Company, the witness also referred to swivel connections which they had used on their dredges for seventeen or eighteen years.

The use of these early types of apparatus in 1906, 1907, 1908 and 1909 by the Great Lakes Dredge & Dock Company in the vicinity of Chicago and elsewhere was followed by other and continuous development work whenever special conditions arose which required special apparatus.

Photograph C shows a further elaboration of the earlier apparatus. It was used in the latter part of 1910 at the plant of the Iroquois Iron Company, South Chicago. This apparatus, the construction of which was also supervised by Cameron (R. 201, Q. 62), comprised a tower with the usual hoist bucket, which dumped the concrete into a hopper, from which it flowed through a *fifty-foot section of 12-inch pipe carried by two booms*. The hopper could

be adjusted vertically on the tower, as is clearly shown from the block and tackle supporting it, although the seat of each boom was fixed at the lower part of the tower, the booms being obviously so long that it was unnecessary to raise them during the progress of the work in hand.

Photograph D, dated December 27, 1910, Exhibit 17, is another view of the same or similar apparatus.

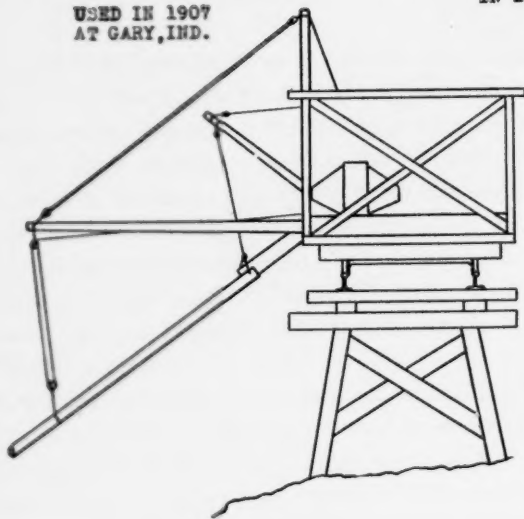
Photograph E, dated May 18, 1911, shows substantially the same apparatus mounted on a scow. Cameron testified (R. 202) that this company had been using this tower apparatus on a scow since the work of the Iroquois plant.

We call attention to the fact that this tower apparatus, with its two booms, as used in 1910 and subsequently, is the logical development of the earlier apparatus, simply modified by the addition of structural features old and well known at the time, whereby the apparatus would be adapted for somewhat different types of construction work. The 1907 Gary intake apparatus involved a mixer, a wooden hopper, and a steel chute supported from a boom, the mixer being mounted on a railway car and the concrete being poured into forms in an excavation. In 1908 and 1909 very similar apparatus was mounted on a scow for the purpose of building a concrete sea wall and building foundations adjacent thereto. When it became necessary to build somewhat higher structures, the hopper and the boom were naturally mounted on a tower containing a hoist bucket, both of the latter being standard equipment at least as early as 1906. The boom was not necessarily used by the Great Lakes Dredge & Dock Company in all cases with apparatus of this general character, as photograph I, dated May 25, 1910, taken in Cleveland, Ohio, shows a similar tower, hoist, hopper and pipe supported by *block and tackle* from the top of the tower instead of from a long swinging boom.

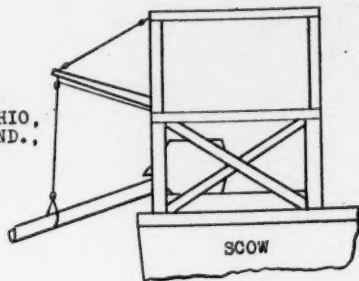
Later developments are suggested by photograph H,

CONCRETE DISTRIBUTING APPARATUS
DEVELOPED BY GREAT LAKES DREDGE
AND DOCK CO., SEE EXHIBIT 17.

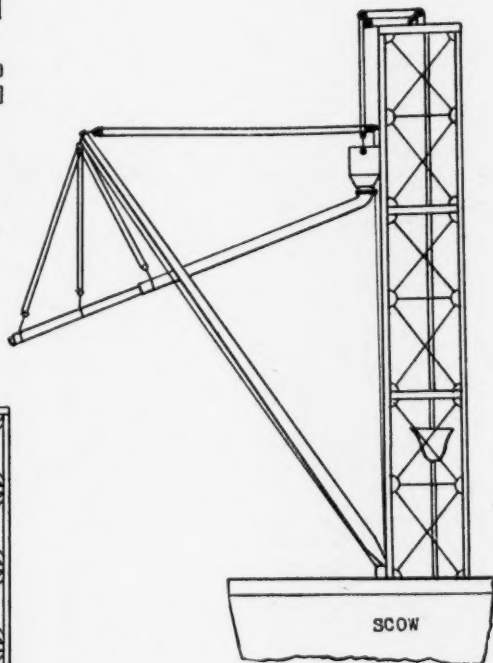
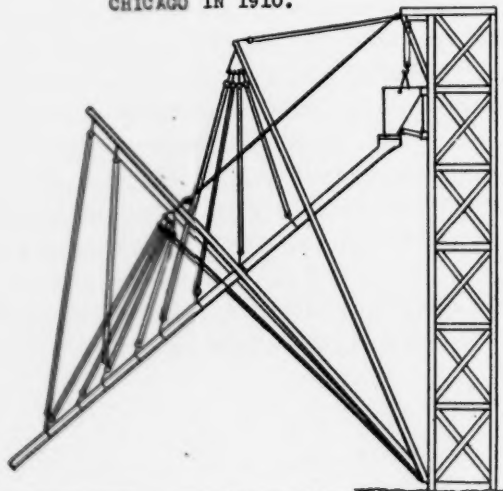
USED IN 1907
AT GARY, IND.



USED IN 1908
AT CLEVELAND, OHIO,
AND AT GARY, IND.,
IN 1909.



USED AT SOUTH
CHICAGO IN 1910.



USED AT TOLEDO,
OHIO IN 1913.

dated October 10, 1913, Toledo, Ohio, showing a *steel* tower of the Great Lakes Dredge & Dock Company, with boom supported chutes thereon, and photograph J, dated April 2, 1914, taken in Cleveland, Ohio, showing a divided boom, through which an open chute passes with a swivel extension on the lower end of the chute.

In open court we produced as a witness, Mr. John R. Williams, of New York, manager of the Atlantic division of the Great Lakes Dredge & Dock Company. He testified (R. 570) that he had been with the company since 1906; he outlined the character of the work carried on by said company, its wide geographical distribution all over the Great Lakes and the Atlantic Coast from Boston to Philadelphia, and gave some idea of its magnitude from the gross operations running anywhere from \$8,000,000 to \$12,000,000 annually.

His testimony is a complete confirmation of the testimony of the various Chicago witnesses from the Great Lakes Dredge & Dock Company, and a summary of their testimony, giving a very good history of the development of the concrete distributing apparatus used by the Great Lakes Dredge & Dock Company beginning in the latter part of 1906 and used practically continuously until the present time, this apparatus involving *continuously* the use of chutes hung from a boom. He also said that "It is purely a Great Lakes development" (Q. 14). This testimony will not be reviewed in detail, as most of the apparatus has been described elsewhere.

The witness referred to the "strong and continued fight on the feature of using wet concrete" at Gary, as the general superintendent for the United States Steel Corporation was opposed to it at the start.

The witness also explained that the eight different divisions of the company all kept in touch with each other

through a weekly publication and through the visits of different members of the organization, so that each division had the benefit of developments made by the others. He also pointed out that all the different types of apparatus illustrated in the photographs, Exhibit 17, were successful and that there was no instance where the tower mixer, for example, either on land or water, was started on a job but what it was completed as outlined (Qs. 16, 17).

The witness stated that his company is not financially or otherwise interested in the outcome of the suit, any more than any other contractor would be interested therein.

Petitioners have alleged heretofore that in the 1907 apparatus of the Great Lakes Dredge & Dock Company, photograph M, it was necessary to hold the boom in position at one side or the other with a guy line. However, the suggestion of petitioners' counsel during cross-examination, that Cameron found it necessary when he swung the metal trough chute around to tie it to the bracing in order to hold it sideways was not concurred in by the witness (R. 210, X-Q. 161) who answered "Not necessarily, we could hold it with a guy line and carry it on our own boom." The fact that a rope was used to swing the boom around does not necessarily mean that such rope was necessary to hold the boom in any position in which it might be left. Apparently this boom was like any other boom. Furthermore, there is nothing in the claims of the patent in suit touching this point.

Petitioners, in their brief, will not concede that this boom of the 1907 apparatus had more than a slight angular movement, and even questioned that. However, it is obvious from the photographs, that the chute could move through a considerable angle with reference to the wooden hopper which petitioners endeavor to disguise

under the name "trough" or "fixed chute." Regardless of names, however, photograph K of Defendant's Exhibit 17, shows the chute extending at a very considerable angle from this wooden hopper. While the boom had not been added at the time this photograph was taken, such addition a little later, as shown in the photograph 17-M (June 5, 1907), obviously did not limit the movement of the chute in this respect, but rather improved it. Cameron testified (R. 214, R-D. Q. 194):

"Can you describe a little more in detail what you did with this rope hanging loosely from the end of the boom, which resulted in swinging the boom?"

"A. The man pulled the boom and chute around to any particular place in this section that we wanted to concrete."

The rope referred to is shown in photograph 17 M and the testimony and photographs completely controvert the statement in petitioners' brief that a limited lateral movement of the lower end of the chute could only be obtained by twisting the joint of the chutes.

Petitioners also allege in their brief that there is no corroboration of Cameron as to the date of construction of the boom supported chute, shown in photograph 17-B, in 1908 use as against the photograph December 18, 1909. However, as previously stated Creutz accurately fixes the use as the summer of 1908, by two important incidents, as previously mentioned. Furthermore, the photograph in the Engineering Record, Exhibit 25, previously referred to, is an exact duplicate of one of the photographs of August 7, 1908, about which Alderman testified. (See his answers to Qs. 4-17, pp. 282-284 of the Record.)

In the last paragraph of petitioners' brief relating to this Great Lakes Dredge and Dock development work, an attempt is made to assert that this company, despite its best efforts, was unable to develop a modern tower appa-

ratus such as shown in some of its 1910 photographs, for example, until after Callahan's filing date. However, Cameron's answers referred to, to support this inference, do not fully support this proposition. While Cameron testified, of course, that he was personally exercising his best endeavors to increase the efficiency of the work, he also emphasized that the defendants' apparatus was devised to suit different conditions (R. 212).

"X-Q. 180. And you were constantly endeavoring to improve their operation, so as to make them more efficient?

"A. As conditions would come about—in different places, under different conditions—we arranged to suit the different places."

The reason that the tower apparatus of the Iroquois Iron Company job, for example, was not built earlier than 1910 was simply due to the fact that the company did not happen to have a contract which required such apparatus. If we consider the successive equipment used from 1907 to 1910, inclusive, we may well ask *what particular step gave evidence of the great inventive genius* which plaintiffs now ascribe to the combination of the Callahan patent? In 1907 the Great Lakes Dredge & Dock company used chutes hung from a boom on a small railway car and discharging concrete supplied by a hopper; in 1908 and 1909 they used a similar apparatus on a scow with the mixer snout serving as the hopper; in 1910 they mounted a boom and suspended pipes on a tower, the pipe connecting with a hopper. A vertically adjustable hopper on a tower had been used for years for the same purpose. Did the elevation of the boom and the chute from a railway car to a tower constitute this radical improvement or was it simply the exercise of ordinary judgment and skill such as contractors are supposed to have in order to solve the various problems

presented by different contracts which they undertake? We cannot see wherein this mounting of the boom and chutes on a tower instead of on a flat car or a barge amounted to invention on the part of the employes of the Great Lakes Dredge & Dock Company. If it was not invention on their part to effect this arrangement, *neither was it invention on the part of Callahan to propose the same thing in his patent application filed January 21, 1909*, even though Callahan did it in a more complicated and cumbersome manner, resulting in apparatus which was immediately discarded and replaced about 1912 by a type very similar to this earlier Great Lakes Dredge & Dock Company 1910 rig.

To sustain the Callahan patent would be to prevent the Great Lakes Dredge & Dock Company from using their own apparatus, the development of which was begun in 1907 and has been continuous ever since, and which in 1910 had reached a perfected stage of simplicity and usefulness not attained by the Concrete Appliances Co. until a much later date.

TRACK ELEVATION.

A. H. Bannister testified, beginning (R. 470), regarding certain railway construction work in Chicago, beginning as early as 1903, including a great deal of track elevation work. During that period the witness had used a railway car mixer having a swinging boom on the end with an endless chain conveyor for conveying dry concrete to the forms. The boom was supported by a cable from a mast and would swing through nearly a half circle. A similar distributor is illustrated on page 49 of the Engineering News of February 8, 1901, comprising part of Exhibit 64.

In the fall of 1909 the witness was employed on Dock No. 2 at Ashtabula, Ohio, for a railroad, which specified the use of wet concrete. About this time a great number of the larger railroads had changed their specifications from dry concrete to wet and the witness stated there was considerable discussion of the subject at Engineering Society meetings (R. 463, Qs. 18-21). The witness found that wet concrete could not be carried up an incline by this belt conveyor he had been using, as it would flow back and he therefore built on a flat car a tower with a hoist, hopper and chute hung from a boom, using this apparatus for distributing concrete in the fall of 1909, as shown by three photographs, Exhibit 50. The date is established by certain correspondence, Exhibit 51. This or similar apparatus has been used by the witness' company, the Brownell Improvement Company, practically ever since, and is described in the Engineering News of August 12, 1915, Exhibit 52.

The witness also testified (R. 467) that he had used a series of *flexible grain* spouts for depositing concrete in foundation work.

This October, 1909, apparatus is another instance of independent invention earlier than the date of the patent, but not quite as early as the filing date, and shows the natural evolution of the art.

GRAIN ELEVATORS—DEPOSITION OF WM. R. SINKS.

Mr. Sinks, the manager of the grain elevator department of James Stewart & Company, after outlining his experience of thirty-five years in the grain elevator business, explained the apparatus used for elevating grain and distributing it through swivel spouts or pipes. He referred, for illustration, to a catalogue of George A. Moulton & Company (Exhibit 28), dated May, 1902, page

21, showing grain spouts typical of structures with which he was personally familiar (R. 158, A. 5). He pointed out that in such grain elevators the grain was elevated by an endless belt to the top of the elevator and was discharged into a receptacle called a garner, from which it flowed into a scale hopper to be weighed, hence it flowed through a series of pipes or spouts to bins, either storage bins or boat shipping bins. The spouts referred to comprise an upper spout having a swivel connection with the grain hopper, the lower end of the spout being movable in a circular path. A second section of pipe is swiveled to the end of the first section and swings about the latter so that with the two pipes any point can be reached within the combined radius of the two sections. He referred, on pages (R. 169 and 170), to a number of patents illustrating different types of grain spouts of this character, describing the apparatus. These patents are set up in the answer and will be referred to elsewhere. He also described the standard Ballinger spout for conveying grain from the boat shipping bins to the boats. The Ballinger spout is illustrated not only in Exhibit 28, but also in Exhibit 12, the Webster Manufacturing Company catalogue, which the witness referred to, and in Exhibit 15, a book entitled "Plans of Grain Elevators," published by the grain dealers. Although this book was not published until 1918, the witness referred to a number of illustrations in it as typical of grain distributing apparatus with which he had been familiar for at least fifteen years.

Mr. Sinks also referred to two blue-prints, Exhibit 11, showing grain pipes supported from an inclined cable or catenary suspension on the St. Anthony Elevator and Minnesota Linseed Oil Company elevators in Minneapolis. The witness had charge of the erection of the St. Anthony elevator in 1902, and was also familiar with the Minnesota Linseed Oil Company elevator. He referred

to page xxiv of Exhibit 15 and explained that the illustration was typical of the apparatus used for distributing concrete both before and after he came to Chicago in 1905. The illustration shows a tower, hoist and hopper intended for wheelbarrow distribution, but *the tower has a boom fastened to one corner, which boom is raised from time to time during the progress of the work, and is used for handling steel and lumber* (Qs. 110-113).

The witness also referred to the fact that in his experience he knew of the use of spouts for distributing grain, corn cobs, coal, crushed stone, sand and iron ore (Qs. 129-131). He also stated (Q. 132) that in his opinion "it would take no ingenuity to spout the concrete as all the principles used in spouting the grain could be used in spouting the concrete, and have been used since 1907-1908." He testified (R-D. Qs. 159-164) that the design of chutes is dependent on the amount of material to be passed through them in a given time and (as would appear obvious) that an experienced man would make his chutes of such size and weight of material as to properly stand the wear and tear of the particular material being used.

The witness was also familiar with the tremies for depositing concrete under water, and had seen such apparatus in Boston prior to 1907, consisting of a vertical spout suspended above the water line by a boom from a mast located in the center of a bridge pier (Q. 143).

The witness also testified that the Insley Company and the Lakewood Company had quoted him prices on concrete distributing apparatus (of the type involved in this suit) and that he found the prices "very high," this opinion being based on his experience in purchasing steel spouting for grain elevator work. This shows that the plaintiff and its licensees have been making the most of their alleged monopoly while it lasts.

Mr. Sinks also testified that grain elevator designers and contractors were somewhat in advance of architects in the use of wet concrete. He stated that prior to 1904-1905 architects demanded that concrete be mixed very dry, but that grain elevator designers and contractors "were a sort of law to themselves" and were the first to use what is known in the trade as "wet" or "sloppy concrete." He ascribes this early use to the employment of special patented *forms* used in building grain elevator tanks, necessitating the use of concrete in a liquid state (Q. 240). He also stated that in such work, with a few exceptions, it was not feasible to use chutes hung from a boom, but that the standard method of wheeling in concrete carts, used for many years, was still employed by him. This situation was also due to the great expense and the first cost of spouting, towers, etc., in the modern apparatus (Qs. 42-50).

GRAIN ELEVATORS—DEPOSITION OF R. H. FOLWELL.

Mr. Folwell is an engineer and contractor of unusual experience in the designing and building of grain elevators. His deposition (beginning R. 478) shows that he was graduated from Cornell University in 1894 and after some preliminary experience designed the elevator for the Great Northern Railroad at Superior, Wis., in 1900.

This elevator was equipped with a downwardly inclined spout capable of swinging from side to side 180° and supported by a horizontal boom also pivoted to swing through 180°. This apparatus is shown in Defendants' Exhibit 29, blue-print WG 575, one of the blue-prints of the Webster Manufacturing Company, of Chicago, by whom the apparatus was manufactured.

Mr. Folwell was chief engineer in charge of the design of this Great Northern elevator, the design being worked

out jointly with Mr. Bellinger, patentee of the Bellinger spout patent No. 605,375 of 1898. The blue-print referred to shows a typical Bellinger installation, such as is shown also in the catalogue of George Moulton & Co., Webster Manufacturing Company and the book entitled "Plans of Grain Elevators."

Mr. Folwell was also generally familiar with the modified Bellinger apparatus shown on some of the other blue-prints in which the boom is inclined upwardly, knowing that there was such an installation at New Orleans and Portland, Me., without having actually seen the installations and having seen a similar installation at Montreal, which, however, being outside of the United States, is of general interest only, this being of interest merely as a corroboration of other testimony.

Mr. Folwell also identified the Barnett & Record blue-prints, Exhibit 11, which drawings were made under his direction and show his long-hand initials "R. H. F." put on them about the time they were made. Sheet 89 is dated February 7, 1902, and sheet 58 is dated October 22, 1904.

Mr. Folwell also "checked over" the original drawings from which the blue-prints of the B. & O. Ry. coal dock, Exhibit 30, were made. This coal dock was built in 1900 and shows a steel coal chute mounted to turn about vertical axes on a bracket or bolster pin, and also to swing up and down on a horizontal axis, this steel trough being arranged to receive coal from a hopper and being supported at its outer end by a steel cable, which permitted it to swing from side to side through a small angle. There was no necessity for swinging it through a full half-circle as in the case of the grain spouts. Mr. Folwell pointed out, however, that it would have been a simple matter to have increased the swing to a full half-circle had such a swing been necessary (R. 483).

Mr. Folwell was familiar with the evolution from dry to wet concrete and was of the opinion that wet concrete had been introduced by grain elevator engineers because of the narrow walls of the elevators and the use of sliding forms (Q. 34). He had also heard of the patent on wet concrete, which was discussed in the Engineering Record of February 14, 1914, and May 16, 1914 (see excerpts in Exhibit 64). The issuance of this patent shows that the Patent Office recognized the change from dry to wet concrete, issuing a patent on it No. 939,072, November 2, 1909, to a party named Ney, under the impression that wet concrete was novel. This laxity on the part of the Patent Office formed the basis of severe criticism appearing in the engineering magazines referred to, and Mr. Folwell stated "the patent caused a great deal of amusement among engineers and contractors, especially those who were engaged in building grain elevators, because for several years before the patent was issued we had been using wet concrete." This patent was afterwards made the basis of a suit in the Seventh Circuit, the patent being held invalid, although not reported. The patent comprises pages 846-848 of the record.

Mr. Folwell, in answer to Q. 44, explained the devices shown on page XI, Exhibit 15, of the book entitled "Plans for Grain Elevators." This apparatus consists of a pipe hinged at the top so it may swing outwardly from the boom and supported in an inclined position by a diagonal frame or support, in other words, it shows a chute supported from beneath by an inclined boom, defendants' apparatus of the third type including a similar inclined prop for the chute.

Mr. Folwell also identified the swivel grain spouts shown in a number of the patents set up in the answer, *i. e.*, Edwards, Robinson, Parker and Bird. He also

pointed out that it was a practice as early as 1905 to raise the hopper from time to time on a concrete hoisting tower by means of a tackle or chain hoist (Qs. 46-47).

GRAIN ELEVATORS—DEPOSITION OF L. A. STINSON.

Mr. Stinson of Chicago testified that he had had twenty-five years' experience in the erection of grain elevators, his deposition beginning on R. 387. He was the engineer of the 1905 New Orleans elevator for the Illinois Central illustrated in some of the blue-prints comprising Exhibit 29.

The tracings corresponding to blue-prints G-1184 and F-825 were made under his instructions and from some of his sketches in New Orleans, and some of his long-hand printing appears on the drawings. He testified that the apparatus was made by the Webster Manufacturing Company.

These blue-prints, particularly G-1184, show an inclined spout supported from an inclined boom and capable of swinging from side to side through nearly a half-circle (170° , p. 400) and dated in June, 1905. The witness testified that 1905 was, in effect, the date of the work. He explained (Q. 5) that these spouts had to be very long in order to reach a second ship where two ships were moored side by side at a dock and that "the spout and boom and fixtures shown on the drawing were worked out to meet that requirement." The witness was also familiar with a similar inclined spout and inclined boom used on the East Side Elevator Company of Toledo, Ohio, having made frequent trips to Toledo and having seen the apparatus in question, although not recalling the date. The date on the blue-print is 1900.

The witness also produced two additional tracings,

blue-prints from which are in evidence as Exhibit 38. They show an elevator built in 1901 in Portland, Me., also comprising an inclined spout supported from an inclined boom and capable of swinging through a sufficient angle to enable a ship to be loaded. The spout in this case, as in practically all others, is swung up against the side of the elevator when not in use to avoid interference with the ship's rigging and when in use is swung out at a right angle to the face of the elevator, *i. e.*, about 90°. Because of special local conditions this particular spout did not swing both ways from mid-position, as it answered every purpose to have it swing one way only (p. 402, R-D. Qs. 162-163). A cut of this apparatus appears in a later section of this brief describing "*Double Use.*"

There is considerable cross-examination with reference to the details of the New Orleans apparatus, defendants' counsel apparently endeavoring to establish the fact that the spouts could not swing a half-circle in a normally inclined position of about 45°. The questions were confusing, because in many cases they assumed conditions which did not exist and the cross-examination becoming unnecessarily prolonged plaintiffs' counsel was invited, if he did not agree with the witness' statements, to produce a model (p. 398) demonstrating wherein the spout and boom would fail to swing the full amount. No such model was produced and we fail to find anything in the blue-prints which suggest anything other than an operative construction. This witness not only testified that *he installed the apparatus in 1905* and that it did work, but that he has seen this New Orleans apparatus since on several occasions, that there are *51 spouts* and that all of them are performing this very function (R. 400, X-Q. 143). This evidence was not rebutted.

The witness also testified that inclined grain spouts

supported by inclined booms had been seen by him in Southport, La., in 1896 and Newport News, Va., in 1900 (Qs. 39-40). He testified furthermore that he knew of no reason why such grain spouts as were in use in Portland and New Orleans could not be used for spouting concrete, "provided the angle was sufficient and the concrete was mixed at the usual consistency." He explained by this that concrete was made much wetter today than twenty years ago when the Portland elevator was built and he illustrated the effect of the increased amount of water used (Qs. 42-47). He brought out on recross-examination (p. 403) that he devised the particular apparatus of the 1901 Portland elevator, Exhibit 38, that "*spouts had always been handled by the ship's gaffs or booms,*" and that he "*merely transferred the ship boom to the side of the building, making it lighter and almost copying it identically.*"

The witness also stated that as early as 1907 he had seen a counterbalanced spout used for grain. This testimony is also corroborated by a patent to Toepfer, 1881. Mr. Insley, one of the plaintiffs, stated that he originated the counterbalanced chute for concrete. If so, we submit that his work was a mere adaptation of this prior grain apparatus and was necessarily limited to mere matters of engineering design.

The witness was also familiar with the common early practice of raising the hopper on a tower as the building became higher and the common early practice of raising a boom from time to time, particularly when used for hoisting re-enforcing steel. He had also seen the apparatus of the Great Lakes Dredge and Dock Company illustrated in their catalogue, Exhibit 19 (pp. 26-29), and had visited South Chicago about 1910 or 1911 and had seen the concrete distributing apparatus used in building

the Iroquois Iron plant (R. 394, Q. 72.) He had also seen the B. & O. coal chutes illustrated in Exhibit 30.

GRAIN ELEVATORS—DEPOSITION OF CARL T. ANDERSON.

Carl T. Anderson, of Chicago, testified (R. 321) that he was a civil engineer with the Webster Manufacturing Company, Chicago; that he had been with them in 1892 and 1893 and from 1919 to date. He identified their catalogue, Defendants' Exhibit 12, published in 1901 and stated that all the devices illustrated therein had been made and sold. The company manufactures transmission machinery, grain elevator machinery and conveying machinery in general. The witness produced original tracings, blue-prints of which comprise Defendants' Exhibit 29, illustrating the boom supported pipe for the Toledo Elevator, 1900; the Great Northern Elevator, Duluth, 1901, and Illinois Central Elevator, New Orleans, 1905. The witness had seen the grain spouts on the Toledo Elevator and the New Orleans Elevator a number of times. Tracings were produced under his order by the librarian from the company files, although the witness was not with the company from the time the original drawings were made. The witness described several different types of swivel connections for grain spouts and described the apparatus of the various blue-prints. He also testified that he had seen spouts similar to Defendants' Exhibit 30, Baltimore & Ohio Coal Dock spout prior to 1907, used for coal, ashes, stone and various purposes.

He also produced a press copy book from the company vault, and other data containing copies or press copy reproductions of shop orders and bills, dated in 1900 and 1901, relating to the Duluth and Toledo elevators.

One of these items (Q. 57) for the Duluth Elevator shows that 16 spouts were sold for \$110.00 each. Even

allowing a liberal margin for a tower, hoist, hopper and boom, it will be seen that the total cost of a concrete distributing outfit on the basis of this price would make the Insely figure of \$3,500.00 look very exorbitant, and would confirm Mr. Sinks' testimony that Insley's apparatus was sold for an exorbitant price as compared to what the witness was paying for grain distributing apparatus of analogous construction.

The witness, on cross-examination, was moved to an admission that there was some limitation in the swing of the grain spouts on the New Orleans Elevator, but in this he was mistaken. Stinson, who designed the apparatus and erected it, testified that there was no such limitation and from a careful examination of the blue-prints we are unable to see that it exists. In fact, during Stinson's examination we challenged plaintiffs' counsel to rebut Stinson's testimony by producing in open court a model based on these blue-prints, demonstrating the alleged limitations in the device, which, of course, plaintiffs were unable to do.

PRIOR PATENTS.

Defendants called no expert to discuss the prior art patents, as they are simple and require little explanation. A number of them were discussed by some of the witnesses, who testified regarding the development of apparatus for distributing grain, Messrs. Sinks and Folwell, for example. Although a number of these patents are the same as those relied on in the Cincinnati suit, there was no testimony in that suit to explain the relation of said patents to the practical art, as there is in the present suit.

The Toepfer patent No. 243,327, of 1881, shows a counterbalanced chute suspended from a hopper in connection with a malt kiln (R. 668). The Edwards patent, No.

366,468, of 1887 (R. 670), shows a barge having a dredging pipe supported from a main boom G, and a smaller frame or supplemental boom E, adapted to swing from side to side, the construction with reference to these two booms being very analogous to the drawing of Fig. 1 of the Callahan patent. The patents to Robinson (R. 693 and 714), Bird (R. 707), Parker (R. 811) and a number of others, relate to swivelly connected pipes used for distributing grain to any portion of the area within the combined length of the two or more pipes. The pipes are supported by several different types of braces or booms, as will be apparent from a glance at the drawings.

The Clarke patent 714,150 of 1902 shows two booms 177, 178 and two extensible conduits (R. 742).

The Clarke patent on pages 798, 799 of the record shows even the refinement of ball bearings for the swivel connection, this being one of the developments which the builders of the Majestic Theater (plaintiff's associates) in January, 1908, thought was an important advance as evidenced by the letter of Mayberry & Parker reproduced on the middle page of the catalog, Defendant's Exhibit 59. This letter is significant in that it refers to *ball bearings* but makes no mention of a boom although plaintiffs now contend that a boom was used on this work.

The Bellinger patent No. 605,375, of 1898, discussed at length in the Folwell deposition (R. 481, Q. 18 and R. 710), is also found among the patents in the answer as well as Record patent No. 667,335, February 5, 1901, showing the apparatus of the Baltimore & Ohio coal dock (R. 720).

The detail of a stiffened pipe or chute (used by defendants in Philadelphia in 1920) was of course old long before Callahan's time as shown by said Bellinger patent of 1898, in which the lower pipe 5 is stiffened by

plates 8, shown in the drawing and described in the sentence on page 1, beginning at line 42. The pipe referred to is swung from a boom like most grain distributing pipes used for the last twenty years or more.

In addition to the various horizontal and inclined booms projecting from the side of a building, as shown in the many patent and blue-print exhibits in the record, it will be noted that the specific horizontally swinging boom 72 on the *top* of the tower (such as was used by Smith on the St. Louis Coliseum rig prior to Callahan's filing date) is shown in the Lonney patent filed November, 1906, found on page 853 of Record. It is also described on page 867, beginning at line 104. This shows that the several types of booms were well-known equivalents.

The British patents show various types of apparatus for handling material of different character. The foregoing patents are not described at great length, as they bear out the testimony of numerous witnesses to the effect that swivelly connected pipes supported by booms have been used for conveying almost every conceivable kind of material for many years prior to Callahan's filing date. However, we request that these patents, which are printed in the record and in evidence as Exhibit 66, be examined at least as to the drawings, which will be understood at a glance. Even in the absence of these patents the court will doubtless take judicial notice of the use of booms for an almost indefinite period. In fact, during the trial the court commented on the use of booms on a ship as a well-known example of such use. The fact that concrete was not conveyed by the apparatus disclosed in the foregoing patents at a much earlier date than it was, is due to the fact that the concrete did not have the proper consistency. The use of similar apparatus thereafter for distributing concrete does not represent an improvement

in the *apparatus*, but an improvement, or change at least, in the *character of the concrete*.

Our contention is, therefore, that even if the patentee had been the first to adapt this old apparatus to this somewhat new use, no invention would have been involved in the minor changes necessitated by such adaptation, since the *real advance* in the art was made by *others* and rendered the new use of the old apparatus perfectly obvious and one which the public has a right to use without paying tribute to some alleged inventor.

See *Shelby Steel Tube Company v. Standard Steel Tube Company*, 286 F. R. 863, Third Circuit Court of Appeals, February 26, 1923:

"Even if Nicholson were the first to conceive the four steps in the order named and the first to embody them in a method and reduce it to practice, his method, we think, was but the natural answer to a new call made by the automatic plug-mill when it came into the industry."

PRIOR PUBLICATIONS OTHER THAN PATENTS.

Prior to the filing date of the Callahan patent, January 21, 1909, the magazines and books in the Engineering Libraries throughout the country were replete with articles discussing the merits of depositing concrete by chutes and arguing the merits of wet *versus* dry concrete. Exhibit 64 is a collection of excerpts from a number of typical publications of this character, including the Engineering News, the Engineering Record, and various text books. To avoid too voluminous a brief, we shall refer only to a few of these excerpts, but we ask careful consideration of all of them.

The Engineering News of June 2, 1892 (Exhibit 64), on page 54 illustrates and describes a concrete plant at Cascade Canal, Ore., in which a stiffened or reinforced pipe

was used to convey concrete from a dumping bucket at the upper end to a car at the lower end. This trussed or stiffened pipe is quite analogous to defendants' trussed chutes used in Philadelphia, as a comparison will show.

On page 544 it is stated that it "was trussed horizontally and vertically by four stays each made of two strands of $\frac{5}{8}$ " steel wire rope." Compare this with the cut on page 18 of petitioner's brief.

The Engineering News of February 28, 1901, page 149, contains an illustration of a mixer on a railway car with a boom capable of swinging nearly 180° , the boom being in the form of an endless belt or conveyor for concrete.

The Engineering News of October 17, 1901, contains an article relating to the Cambridge bridge, with a portion on page 283 referring to the use of tremies, that is, pipe sections nested one into the other, in a vertical line for depositing concrete under water.

The Engineering News of December 25, 1902, on page 537, described the use of chutes in connection with the Rock Creek bridge in Washington, D. C.

The Engineering News of July 30, 1903, on page 93 describes the hoist tower, dumping bucket, hopper and chutes shown in Fig. 14, and illustrating the apparatus used on the Ingalls Building in Cincinnati.

The Engineering News of March 30, 1905, page 331, shows a concrete spout depending from a bridge.

The Engineering Record for July 6, 1907, on page 13 describes a 25-foot boom carrying a 20-inch traveling belt conveyor for distributing concrete along a 90-degree arc.

The Engineering Record of May 16, 1914, discusses on page 551 the issuance of the Ney patent, covering in substance, wet concrete, and commenting on the extraordinary condition in the Patent Office which would permit the issuance of such a patent, and stating that the patent had been held invalid by Judge Sanborn, November 12,

1913. Although these dates are too late to be of interest in connection with anticipation, this patent is referred to for the purpose of showing that even the Patent Office thought wet concrete was novel at the time the patent was applied for, in July, 1909. It also confirms the fact that the Examiners are often apparently unaware of practical developments in the art outside of the Patent Office. Defendants' witness Folwell stated that this patent caused considerable amusement among elevator engineers, just as considerable surprise and astonishment must have been caused when engineers and contractors in Cincinnati and St. Louis, for example, familiar with the work on the Ingalls Building, the American Theater Building and the St. Louis Coliseum read the decision of the Circuit Court of Appeals in Cincinnati upholding the Callahan patent and stating (262 Fed. 958, p. 965) that:

"The quasi automatic elevation and distribution of wet concrete under the varying conditions of progressive building and by a single apparatus was an entire novelty. No one had tried to do it; apparently, no one had thought of it; it was useful in a very high degree."

"Mines and Minerals" of December 3, 1903, contains some pertinent comments on the cheapness and convenience of placing concrete by chutes; "Concrete and Reinforced Concrete Construction," by H. A. Reid, 1907, contains a reference to an 11-inch pipe suspended from a truck that moved laterally on a frame for depositing concrete in the harbor bridge foundations; and "The Michigan Engineer" of 1906 contains an article by William G. Fargo with reference to the use of wooden spouts and hoppers. Mr. Fargo was one of defendants' witnesses.

"The Engineering News" of December 5, 1902, contains several paragraphs explaining how the ingredients are kept from separating when concrete slides through chutes.

"The Transactions of the American Society of Civil Engineers" for 1904 contains a discussion on wet concrete in conjunction with the experiments on the coefficient of expansion of steel; and "Concrete Plain and Reinforced," of December, 1909, by Taylor, contains a discussion of the relative merits of jelly-like concrete and mush or sloppy concrete.

In Gilbreth's book, "Concrete System," 1908, is an article referring to four 72-foot booms used on a New York building, which booms could be raised to higher positions without delay. This is the same building referred to by Mensch in his deposition.

These and other articles in the same exhibit, together with other publications in evidence, show that if a contractor were well informed in 1907 as to the developments in the use of wet concrete, pipes and chutes throughout the United States, he could hardly have failed to try such equipment at one time or another during his work, where a condition was met which provided the opportunity.

We call attention to Exhibit 52, a complete copy of The Engineering News of August 12, 1915, containing four articles describing different types of concrete distributing apparatus involving chutes. On page 321 we find the following editorial under the heading "Concrete Chuting Predominant":

"In this demonstrated success, so widespread that the chuting system has practically driven out of use every other method of placing concrete, it is somewhat curious that a former criticism seems now to have been forgotten. A year or more ago when the chuting system was first booming there were many and frequent complaints that its use required an excess of water in the concrete, and an excess of water was regarded as a set-retardant and a reducer of early if not of final strength. This complaint naturally enough came from the engineer or owner who

had let the concreting for a fixed price and not from the contractor who was interested in the cost reductions the chuting method was bound to show. To-day, while this criticism is still occasionally heard, its force must certainly have abated, else the concrete tower and chute would not be the predominant feature in most concrete jobs."

These articles also confirm our contention that the change from dry to wet concrete was a gradual evolution and met with considerable opposition, which doubtless explains why more contractors did not use grain-spouting apparatus for placing concrete at a much earlier date than 1907, for example, being prevented from doing so by the opposition of the architects and others in authority.

MAJESTIC THEATER BUILDING, LOS ANGELES, 1908.

Defendants took depositions to show that Emtman devised a system of pipes for distributing concrete during the erection of the Majestic Theater Building, these pipes extending from a vertically adjustable hopper on a tower, very much like the pipes used on the American Theater Building in St. Louis the year before, beginning about July 1st, 1907. The use of similar but smaller pipes on the Majestic Theater began in January, 1908, nine months earlier than the date Callahan claimed he was entitled to, when his application was pending in the Patent Office during 1909. Defendants also took this testimony to determine whether a *boom* was used to support the pipes, such apparatus as was employed, being used seven months earlier than the boom suspended chutes used on the St. Louis Coliseum in August, 1908.

Following defendants' depositions, plaintiffs took depositions apparently for the purpose of establishing that this Majestic Theater apparatus was the invention

of Callahan, not Emtman, thereby attempting to establish a date earlier than anything claimed heretofore by Callahan. This was obviously for the purpose of ante-dating by a few months the St. Louis Coliseum apparatus, which had been established by defendants as a complete anticipation of Callahan's patent, and shown beyond a reasonable doubt, by dated photographs, to have been built in the late summer and fall of 1908.

Both parties therefore rely on this Majestic Theater Building to help prove their case. Before describing the system of pipes used on this building, however, we shall refer to the two sworn preliminary statements filed in the Patent Office by Emtman and Callahan in the summer of 1909. These statements are reproduced in the form of a chart on a later page of this brief.

Emtman stated *under oath*, July 31, 1909, that he commenced the construction of full-sized apparatus during the month of November, 1907, and he completed it about the latter part of December, 1907, "and that the said apparatus was first successfully operated during the latter part of December, 1907, or the early part of January, 1908, in Los Angeles, California; that he has since continued to use the same, and that since then he has manufactured seven other similar apparatus." Callahan, on the 9th day of August, 1909, made a *sworn statement* "that he made a full and complete apparatus beginning with the 18th of September, 1908, and completing the same on the 11th of October, 1908; that inasmuch as the apparatus was then complete and successfully operated he considers that he reduced the invention to actual practice not later October 11, 1908; that the invention has been successfully used in the erection of structures in various places."

As we shall point out, the testimony shows without question that the Los Angeles building on which pipes

were first used, beginning in January, 1908, was the Majestic Theater Building, and that Emtman was general superintendent of the work. It also shows that in the late summer and fall of 1908 and the spring of 1909, Callahan was employed on the erection of the Timkin Building in San Diego, and there used a pipe encased in a swinging lattice work, which he calls a "boom," and which is illustrated in his patent.

The patents of both Emtman and Callahan, being owned by Concrete Appliances Company, one of the plaintiffs, since prior to their issuance, and plaintiffs' apparatus having been developed in California, defendants, with their Philadelphia location, realized the difficulties to be encountered in entering their opponent's home territory for the purpose of proving a situation opposed to the interests of plaintiffs, particularly in a state where the "native son" idea is so generally acquiesced in. As anticipated, considerable difficulty was encountered, even though defendants' representative appeared on the scene for the simple purpose of proving that Emtman and Callahan, when they swore to their preliminary statements in 1909, *were telling the truth*, and for the further purpose of confirming the honesty of Callahan when he testified, several years later in the Canadian suit, that he *first* used his invention as a completed apparatus on the Timkin Building in San Diego.

Among others we called Mr. H. W. Bryson, a stockholder and formerly president of the Concrete Appliances Company; Theodore Emtman, the patentee, who was a former stockholder, and L. A. Parker, architect and engineer in charge of the erection of the Majestic Theater Building.

As we anticipated, Emtman, who in 1909 swore to the January, 1908, date of invention, was stricken with a lamentable lapse of memory and was *unable to recall* any

particular work he did on the Majestic Theater Building, was unable to recall the year in which the work commenced, was unable to recall that he gave any directions or advice to others in connection with the work, or whether he had ever talked with Lee Callahan about improvements in the distribution of concrete; was unable to recall having been in interference with Callahan in the Patent Office, was unable to recall whether he received any stock from Concrete Appliances Company, stating further that it was none of our business, and *was unable to recall that he ever signed a preliminary statement or anything in connection with it*, even when shown a certified copy of such statement.

As we anticipated further, plaintiff, after we had examined Emtman, called Callahan as a witness, whose memory had *improved* so in the eleven-year period from 1909 to 1920 that he was able to remember not only the original "first use" of his apparatus on the Timkin Building in the fall of 1908, but he was even able to remember an *earlier first use* of said apparatus on the Majestic Theater Building in January, 1908, including a boom. He remembered further that he first arrived in Los Angeles about November 26, 1907, he remembered the substance of certain conversations with Mr. Bryson within a few days thereafter, the approximate length of said conversations, that he started to work for The Engstrum Company the day after Christmas, 1907, and substantially what work he did the *first* day, the *second* day, and the *third* day, although he had no time book or diary to enable him to fix the dates or the circumstances.

The U. S. Supreme Court in an analogous situation, said in *Clark Thread Company v. Willimantic Linen Company et al.*, 140 U. S. 481, May 25, 1891:

"No person accustomed to weigh the credibility of human testimony can fail to perceive the stress

under which this evidence was given. . . . We feel bound to put this strict construction upon the patentee's evidence because such testimony given for the purpose that this was, is necessarily subject to the greatest suspicion, however honest and well intentioned the witness may be. . . . We conclude, therefore, that there is no proof on which reliance can be placed that Conant made his alleged invention before the publication of Weild's patent in England. After Weild's patent was introduced into the case, showing with certainty the date of its publication, and such date anterior to the issue of Conant's patent, it was incumbent on the plaintiffs, in rebuttal, to show, if not with equal certainty, yet to the satisfaction of the court, that Conant's invention preceded that date. *St. Paul Plow Works v. Starling* (*ante*, p. 404), decided this term."

"It is also clear that Conant was not a pioneer in this department of invention, and that he must be held strictly to the terms of his patent and was entitled only to the specific form of device described and claimed therein."

If this Majestic Theater Building were our only defense and the usual burden was on us, as defendants, to prove invention by others prior to the filing date of the Callahan patent, the case as made out for us by witnesses called from among plaintiffs' officers, stockholders and employees, would not be very reassuring. Fortunately, **however, the burden is not on us to prove the use of boom supported chutes on this Majestic Theater operation, early in 1908.** On the contrary, our proofs regarding the boom supported chutes used on the St. Louis Coliseum in August, 1908, five months earlier than Callahan's filing date, are so firmly established that **the burden of proof has been shifted to plaintiffs to show an earlier date of invention than the date of the Coliseum,** and this burden must be discharged by the plaintiffs by the same strict weight of evidence that was required of defendants in establishing the Coliseum prior use.

If it develops from the testimony, therefore, that the pipes on the Majestic Theater Building were *not supported by a swinging boom* but were otherwise supported, plaintiffs will have failed to carry their date of invention back of the Coliseum date, and such apparatus as was used on the Majestic Theater in January, 1908, would be substantially the same as what was used in St. Louis on the American Theater Building in the summer of 1907. If, on the other hand, a boom *was* used on the Majestic Theater Building, *the burden is still on the plaintiffs to show that it was added to the combination by Callahan and not by Emtman*. In other words, it is not enough to show merely that a boom was used but that the invention, if it is to be called such, was specifically Callahan's invention and not the invention of any one of a dozen other employees of the company.

We place special emphasis, therefore, on the fact that if, in our testimony, we have raised any substantial doubt as to the use of the boom, as part of this Majestic Theater apparatus, or have raised any substantial doubt as to who was responsible for the use of a boom in case it were used, plaintiffs' case must fail.

Our first witness was Mr. Bryson, manager for F. O. Engstrum & Company, from 1904 to 1916 (assignee of the Emtman application before it was filed), a son-in-law of Mr. Engstrum, Sr., deceased, and a brother-in-law of the son, Mr. F. E. Engstrum, now president of the Concrete Appliances Company, and himself a former president of Engstrum & Company (R. 427, Qs. 12-13).

Our direct examination, as between the activities of Callahan and Emtman in connection with the American Theatre Building was limited to questions regarding Emtman. The answers showed that he directed the erection of the American Theatre Building and that he had many talks about that time, as well as prior thereto, with

Mr. Bryson, about "the feasibility of running concrete by gravity" (R. 426, Q. 5).

Our contention is that the *real problem* in connection with this work, as well as with the prior buildings erected in St. Louis, Norfolk and Cincinnati, *was not the apparatus for supporting the chutes*, as numerous different types of supports were at hand ready to be adopted, depending upon the character of the undertaking, but related instead to the *consistency* of the concrete and the practicability of permitting it to *slide* through troughs or pipes without partial *separation* of the constituents. This contention is confirmed by the answer to this question 5, just referred to, as Bryson states that this was "a very difficult feature" and also question 10:

"One of the principal drawbacks from an engineer's standpoint was the mix or concrete to flow by gravity. The mix or concrete to flow by gravity was different than any engineers had tried before. The question in everybody's mind was whether the rock would separate from the cement or gravel, and *many a conversation was had on the lines of getting a mix irrespective of apparatus* or whether it would flow by gravity or not."

Other discussions of the problem by plaintiff's associates at that time appear in the record.

The point we wish to emphasize is, if these parties solved *any* problem at the time, they solved the problem of what proportions of stone, sand, cement and water to employ in order that the concrete might flow without separation of the ingredients, what angle of inclination the pipes should have, how large they should be to prevent clogging, and whether, in fact, pipes should be used at all as distinguished from open chutes.

Giving plaintiffs the full benefit of their later testimony and assuming that they solved these problems during

the year 1908 and subsequently, for they were not solved immediately by any means, we contend that they were not the first to overcome these difficulties, but could have handled the wet concrete successfully from the very outset had they been familiar with developments in the middle west and in the east for a period of several years preceding. The Los Angeles depositions, not only defendants' but also plaintiffs', show that these Los Angeles parties *were not well informed* on current engineering developments as brought out in numerous engineering publications, in which the use of wet concrete had been discussed pro and con for years, and successful use, by a large number of concerns scattered throughout the eastern half of the country, fully demonstrated, as for example, on the Ingalls Building in Cincinnati in 1902.

The inference we draw from the testimony of this particular Los Angeles witness is the same as the inference we draw from the testimony of our other witnesses who testified to earlier uses in the eastern half of the country, *i. e.*, that in every case there was a considerable period of discussion and experimentation with reference to the consistency of the concrete, and after this problem was solved, the use of the apparatus was *incidental* and resolved itself merely to a question of *selection from the available equipment*, whether previously used for delivering concrete, grain, coal or any other material.

The Emtman apparatus, as shown in his patent embodies a pipe hung from a horizontally swinging boom, the latter being supported by cables from a vertical, rotatable mast on the top of the tower. Mr. Bryson states that this rotating mast was used, particularly on some of their later work, but admits that the particular rotating mast detail was not developed until *after* such

general features as were developed on the Majestic Theatre Building.

Bryson endeavors to make it appear that a boom was used as part of the Majestic Theatre apparatus (see R. 429, Q. 24):

"Q. 24. Was the rotatable mast used in connection with the cement work of the Majestic Theatre?

"A. Well, you might term it that. It was a boom. Part of it was a boom; afterwards it developed into a more perfected boom. My recollection was a stick about 20 or 25 feet long that was so constructed that it could vertically move with the pipe quite a degree away from the tower swinging movement and the pipe was hung from a guy wire from tower, which gave it that oscillating movement. A very crude method of what has now developed into the gravity system and particular feature of it was developed by Mr. Callahan on that particular job. That is, it was under his supervision. He was under the working foreman on a job. It was explained to me he had had some previous experience on gravity system and was allowed to put one up there. That was in 1907 about the latter part and the first part of January, 1908, and it was continuously used and improved as we went along. We first started with a 4-inch pipe and they found that clogged; then we got a 6-inch and found that clogged; then we got an 8-inch pipe all with this little boom or pole or little arm and pipe suspended from tower by cable and swivels so as to get an oscillating vertical movement. That was very crude compared with drawings that came after so far as a whole gravity system was concerned, which had to be developed from different angles, so we could use it from a practical standpoint."

Bryson, it will be seen, took the opportunity to volunteer statements regarding *Callahan's development* of the boom. The answer itself is somewhat confused with reference to a rotatable mast vs. boom, and the witness later admitted "that he had the mast confused with

Callahan's arm or boom" (R. 448 and the very leading R-X. Q. 179 of plaintiffs' counsel).

This is not the type of proof required to overcome the burden of proof resting on plaintiffs. The witness testified (R. 431, Q. 32) that the apparatus as a whole "gravity system" was developed by the F. O. Engstrum Company, being partially developed on the Majestic Theatre Building, "the boom and pipes and this vertical movement to the side and extended over quite a vast area in a crude way" (the witness means horizontal movement). He went on to say that while "that particular angle was developed on the Majestic Theatre job" it was "perfected on the Elks Hall, Christian Science Church and Union League Building." It is significant that other parts of the testimony established that these buildings were built by Emtman, while Callahan was elsewhere.

On cross-examination by plaintiffs' counsel, the witness was immediately asked about Lee Callahan and his developments, *thereby making Bryson plaintiffs' witness as to this Callahan development work*, which fact was called attention to by defendants' counsel, as shown on page 430. The witness accepted the opportunity to make a very favorable showing for Callahan, stating that he first met Callahan about the middle of December, 1907, and talked with him regarding the distribution of wet concrete and that he had some ideas about distributing concrete, "said it was in the mix" (R. 433, X-Q. 53) and that he could use the tower and skip in conjunction with a chute and pipe, and that he said "the pipe would be held up by trestles, or swing from the boom." (The first mention of the word boom.) It is significant, however, that the witness also reported Callahan as explaining "a half dozen different ways as far as holding the pipe in the air was concerned," which

agrees with our contention that the boom, if any, was an incidental feature. He also stated (R. 434, X-Q. 59):

“Callahan developed a kind of a crude pan effect where he had kind of a nail in the center of it where it would revolve around and on that he hung some 4-inch pipe and the pipe was supported by wire from the tower. A day or so after that he put an arm to help to hold up the pipe which revolved around with the pipe when you went to swing it from right to left.”

This “crude pan effect” statement, if true, only emphasizes our contention that Callahan, among others in the same company, was not aware of all the highly developed apparatus available for this purpose, which doubtless caused him and his associates to conceive that they had made more of an advance in the art than they really had. For example, Callahan’s employees could have *purchased* a swivel joint with a pipe extension, such as was being used in the grain elevator art, by merely ordering one by number after reading a catalogue of some company supplying this equipment, for example, the Webster Manufacturing Company of Chicago, whose catalogue was published in 1901. (See Defendant’s Exhibit 12.) This same thing was done by Fargo and Hunt in 1906, in distributing concrete for the Webber Dam, except that the apparatus was made locally, to correspond to an illustration in a grain dealer’s equipment catalogue, instead of being ordered from the manufacturer.

Callahan’s employers (or rather Emtman) also got into difficulty immediately by using 4-inch pipes, which were entirely too small, a difficulty which was avoided from the outset on the Webber Dam in 1906 by using 11-inch pipes, illustrating the simplicity of the solution, when trained engineers had the problem in hand.

With reference to the subsequent success of this ap-

paratus on the Majestic Theatre Building and the details of the support of the pipe by a wire, or possibly by a brace or boom, such facts were brought out almost entirely through leading questions by plaintiffs' counsel, as shown on page 436. If any boom was used on this apparatus, and we maintain that such use is not proved, it was nothing more than a short brace or stick to help prop up some part of the pipe, the real boom, as such, being developed later on other buildings no earlier than the fall of 1908 and after the date of the St. Louis Coliseum erection. "However, though, you know that a boom was a stick that afterwards developed into a boom 20 or 25 feet long." (See R. 437, X-Q. 93). If the later boom was 20 or 25 feet long, the earlier Majestic Theatre "stick" could not have been much more than a prop or brace of moderate length, certainly much less than 20 feet.

The witness further testified that Callahan was not continuously with the Engstrum Company on the Majestic Theatre job, but left after six or seven months and was put on a San Diego job, the Timkin Building. This was the apparatus apparently from which the Callahan patent drawing was made. We shall discuss it later.

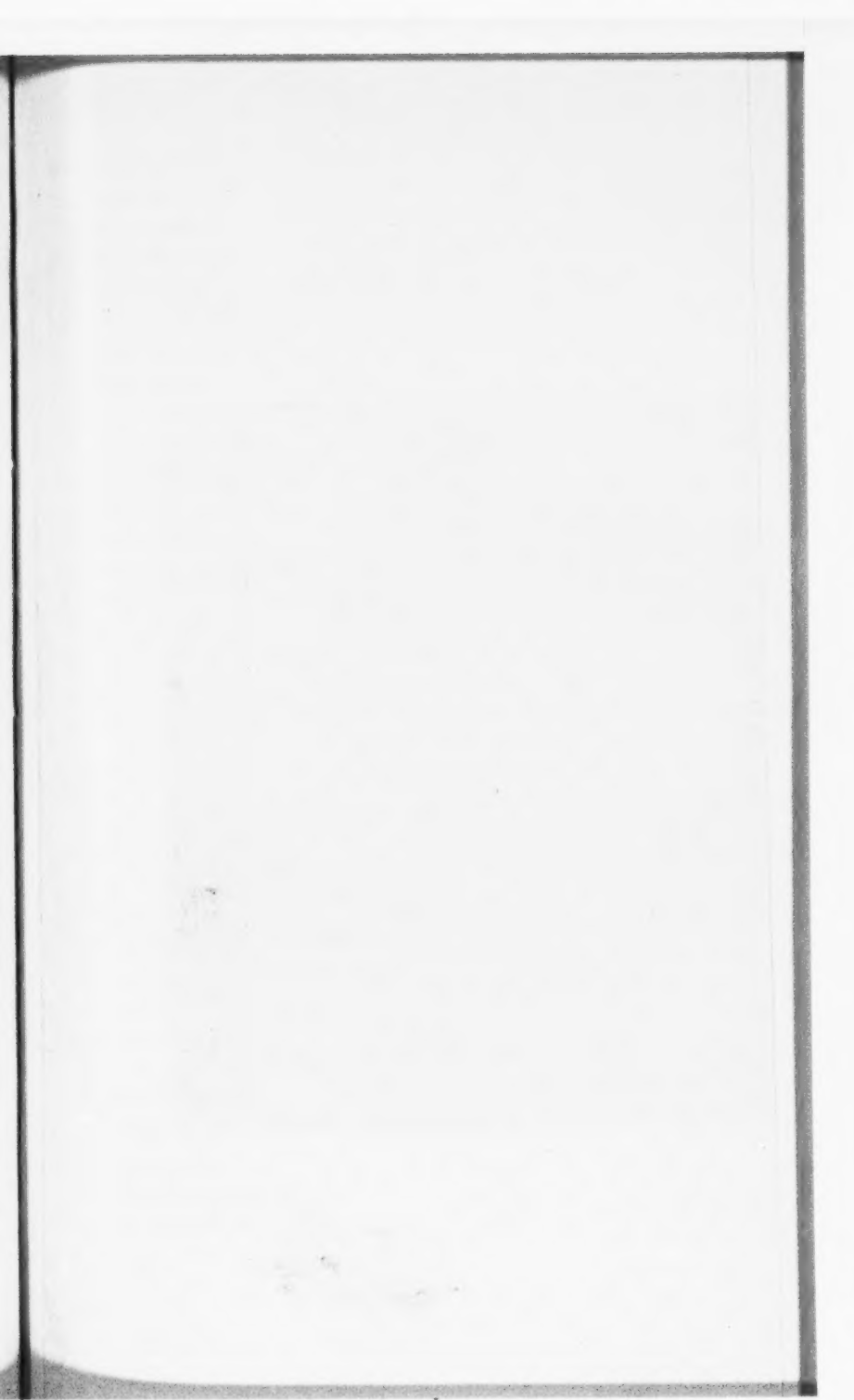
The witness brought out that Callahan was in the employ of the Engstrum Company for eight or ten years, which would be until 1916 or 1918, and that both the Callahan and Emtman apparatus was used on the various buildings constructed during the years subsequent to their development. The witness stated that Emtman's apparatus was used on about two-thirds of the buildings and Callahan's on about one-third, "after both systems were perfected."

"Emtman's patent was applied for through Lyon & Hackly, patent attorneys, Los Angeles," said Mr. Bry-

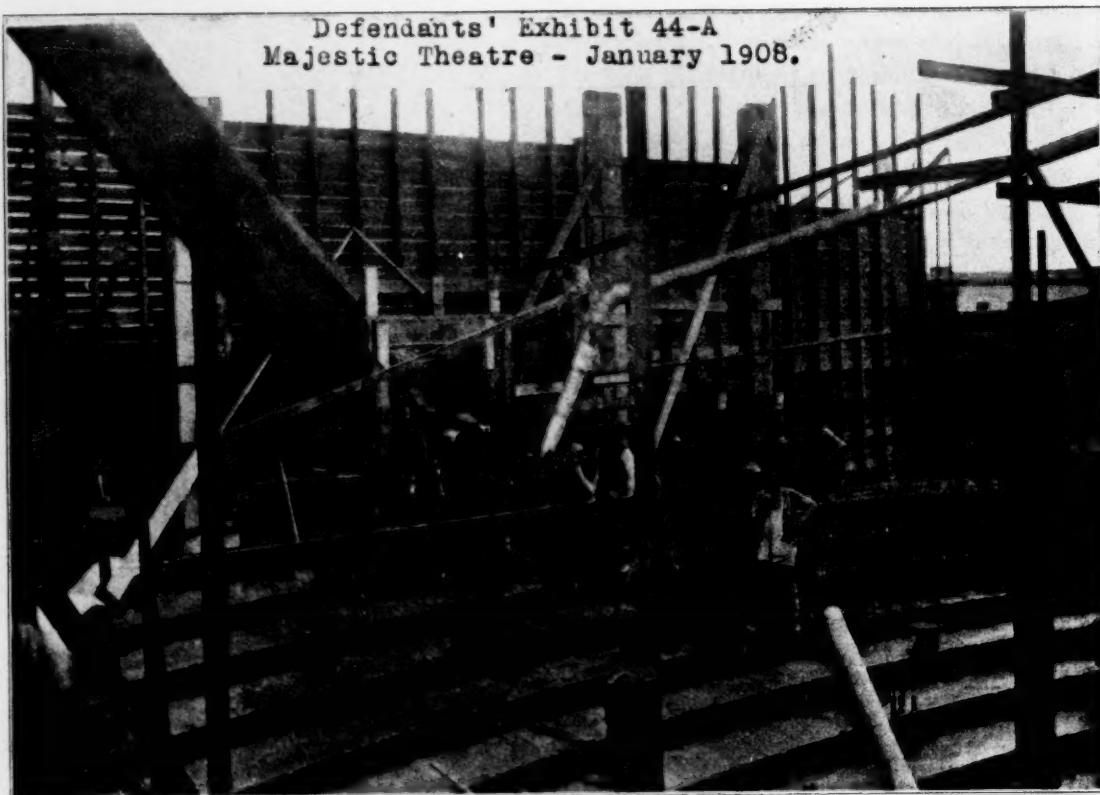
son, "and I paid the necessary attorneys' fees at the time." This shows that Emtman and Bryson were in close contact with reference to this development work and considered it a company matter, Emtman assigning his application to the company shortly before it was filed. (See Exhibit 68.) Callahan, on the other hand, employed Mr. Sheehy in Washington, D. C., beginning correspondence with him late in 1908, and apparently without the knowledge of the company. In fact, the Patent Office record and much of this record is persuasive that the company had no knowledge that Callahan claimed to be the alleged inventor of this Majestic Theater Building apparatus, or anything of the same character, until the interference was declared in the summer of 1909, and even then his claim was based on the Timken Building. This situation confirms our contention that the officers of the company regarded Emtman as the first inventor of this general character of apparatus, whether with or without a boom, and were doubtless surprised to learn much later that Callahan made claim to it, although it is now to their interest to assert the contrary.

Bryson also said that Callahan never had any financial interest in the Concrete Appliances Company (R. 444, R-D. Q. 150). In other words, he was a mere employee. He was, therefore, bought out when it was discovered that he had filed an application for a patent, and since Emtman was a stockholder of the company and the company was to own both patents, it would be immaterial, from the company's standpoint, which was the first inventor of the boom combination; also since *Callahan filed his application a few weeks earlier than Emtman*, it is not difficult to see why *Emtman was asked to concede priority to Callahan of the boom claims* in order to avoid a useless contest in the Patent Office.

Furthermore, Callahan may have had some pride in being recognized as the prior inventor in selling his application to the company, and perhaps obtained a better price for it, whereas to Emtman it would be immaterial whether he was considered the prior inventor or not, since he would profit in either case through his stock interest in the company. *Having previously assigned his application, he had nothing to gain.* It is also quite likely that, upon consultation with the company's patent attorney, Mr. Lyon, and a discussion of the actual evidence, it developed very clearly that Callahan's boom apparatus used in the fall of 1908 was earlier than Emtman's boom apparatus developed on the Elks Building, and other buildings begun somewhat later than the Timken Building, and upon a close scrutiny of the issues by the attorney it may have developed that Emtman, while relying on the Majestic Theater apparatus in his preliminary statements as establishing the general concept, as in the three party interference, may have considerably overstated the case in relying on it as a reduction to practice of the boom apparatus in the two party interference. Since the testimony seems to bear out the fact that no boom was used on this Majestic Theater Building, but was probably used by Emtman about a year later on the Elks Building, and others of the same period, the company's attorney would naturally recommend a concession of priority in accordance with the actual facts, to avoid obtaining an invalid patent. In other words, we believe it is a fair inference that the concession in the two party interference from Emtman to Callahan was *an admission that Callahan's Timken Building apparatus was earlier than Emtman's Elks Building apparatus*, and that neither party was entitled to rely on the Majestic Theater Building apparatus; otherwise their dates would have



Defendants' Exhibit 44-A
Majestic Theatre - January 1908.



been identical and neither would have been prior, to say nothing of the impossibility of proving the use of a boom on this building.

We call attention to the fact that *no one has been able to produce, on behalf of plaintiffs' any photographs showing a boom used on this Majestic Building*; nor has anyone offered in evidence any drawings showing such boom, aside from a crude sketch made by Callahan the day he testified, the boom in which is different from that described by any other witness. There has been some conflicting oral testimony and considerable discussion by witnesses called both by plaintiffs and defendants, to the effect that some kind of a prop or stick was used. However, such oral testimony, unsupported by photographs or some documentary evidence, is utterly lacking in all the essential requirements (*Barbed Wire Case*, 143 U. S. 275). Defendants, on the other hand, have offered in evidence, as Exhibit 44, four photographs from the files of the architect, L. A. Parker, although produced by Mr. Bryson. These pictures were taken some time after the apparatus in question was first put into use, and show pipes supported in a haphazard manner on scaffolding or false-work, but *no sign of a boom*. Plaintiffs have endeavored to show that the alleged prop or boom was used in constructing the balcony of the Majestic Theater. If so, it would have appeared in some of these four photographs, as they were, obviously, taken at that period, as they show the balcony both before and after the pouring of the concrete.

Our contention is that this Majestic Theater apparatus was a crude early apparatus, involving pipes which were too small initially, and none too large finally; that they were *supported on falsework and moved about by hand*, and that no boom, in the ordinary sense of the word, was successfully used at this time; that such apparatus as was

used was *suggested by Emtman*, Callahan possibly doing some of the detailed work; that both parties seeing the necessity for improvement, developed the apparatus at a *later date* by improving it in numerous respects and doing the very natural thing of *adding a boom* to swing the larger pipes, to avoid the inconvenience of having them lifted around by the workmen, a method that was apparently practical on the Majestic Theater Building, where small pipes were used.

Emtman was naturally the man to suggest and install this Majestic Theater apparatus. Bryson stated (R. 442, X-Q. 133):

"Mr. Emtman was in charge directly of it. He was a man we used as a general utility man, a man we consulted frequently on mechanical operations and our plan was to keep him as free as we could from any one particular job; except where necessary to put him on a job we were organized to such an extent that we could call him off that job if needed. Mr. Callahan might be termed a sub-foreman on the job; he had other foremen over him."

The fact that Callahan may have had some ideas for distributing concrete through pipes before reaching Los Angeles at the end of 1907 does not change the situation, as anyone who read the technical magazines of the earlier period would have had similar ideas. Emtman may have had the idea of a boom in mind during the use of the pipes on the Majestic Theater Building, and quite likely would think of it as a logical addition to the equipment, to be applied on some later job where heavier and larger pipes would justify it. This view is confirmed by his preliminary statement, in which he sets up a date corresponding *exactly* to the beginning of the use of this Majestic Theater apparatus, whereas Callahan apparently had no such thought in mind until after he had left the Majestic Theater job and gone to San Diego, as he gave no date

corresponding to the early use of this apparatus, but instead gives dates corresponding exactly with the work on the Timken Building, about ten months later.

By way of reminder it should be stated that both Callahan and Emtman filed two preliminary statements. The accompanying chart gives all of this data in condensed form.

Smith, Emtman and Callahan were in what may be called the first interference, and Emtman and Callahan in the second interference, these interferences being concurrent however. The dates alleged by Callahan in his first interference were exactly the same as in the second, and the dates alleged by Emtman were likewise identical in the two interferences. The issues in the first or broader interference, which were conceded to Smith by Callahan and Emtman, involved the following four elements—see claim 3 of the Smith patent, which was count 2 of the interference:

“a concrete elevator, a revolubly mounted distributing pipe adapted to be fed by said elevator, a second distributing pipe revolubly mounted at the mouth of the first-named distributing pipe, and means for controlling the angle at which said distributing pipes are mounted.”

The *means* for controlling the angle is obviously *any* support for the pipes, *i. e.*, horses, falsework, block and tackle, or a boom, whereby the pipes may deposit the concrete at any point in a given area and the slope may be changed, if desired.

It will be noted that this claim reads on the Majestic Theater apparatus, and Emtman, therefore, as the inventor thereof, was justified in basing his statement thereon, in the three-party interference. However, in the two-party interference he was not justified in relying on this same January, 1908, date, as his attorney, Mr. Lyon,

doubtless recognized when he permitted a concession of priority from Emtman to Callahan on the claims involving a *boom*, such as claim 1 of the Callahan patent, for example, which was in the two-party interference and comprises the following elements:

“a tower, a suitably supported horizontally movable boom connected therewith, a conduit carried by the boom, means for raising plastic material to a suitable point in the height of the tower, and means for receiving plastic material from said raising means and conducting the same to said conduit” (*i. e.*, a hopper).

In the above interferences Callahan had the same opportunity to rely on the Majestic Theater apparatus in his preliminary statement as did Emtman, but he was honest enough, at the time, to stick to the facts and not attempt to appropriate some one else's work as his own, even though the claims in the three-party interference *read directly* on the Majestic Theater apparatus, being very broad with reference to the type of support for the conduits or pipes. By selecting a date of October, 1908 (the Timken Building), he *admitted*, in substance, that he was not entitled to the Majestic Theater date as to the broad issue. Much less was he entitled to the narrower issue, including a horizontally-movable boom connected to the tower.

We also called Mr. Parker as a witness. He stated that he took progress photographs of the Majestic Theater Building, up to the eighth floor, in addition to those which we offered in evidence, but that they showed nothing of interest. If any of them had shown a boom, it is obvious that plaintiffs would have produced such photographs, either through Mr. Parker or through his partner, Mayberry, who made an affidavit, which plaintiffs filed in support of their preliminary injunction motion in the fall of 1920, alleging the use of something which supported the

Interferences Nos. 30,533 (Three - Party) and 30,618 (Two-Party) Arranged in the Order of Filing in the Patent Office.

| Callahan. | Emtman. | Smith. |
|---------------------------------|---------------------------------|---------------------------------|
| | Conception.....June, 1906 | Conception.....July, 1906 |
| | | Sketches.....July, 1906 |
| | | Drawings.....July, 1906 |
| | | Disclosure.....July, 1906 |
| | | Reduced to |
| | | practice.....Aug. 1906 |
| | | (Amended).....Sept. 1906 |
| | Sketches.....Oct. 1906 | |
| | DisclosureDec. 1906 | |
| Conception...July 15, 1907 | | Further use..... 1907 |
| Sketches.....July 15, 1907 | | |
| ModelJuly 15, 1907 | | |
| Disclosure ..Aug. 15, 1907 | | |
| | Reduced to practice | |
| | Dec. 1907 or Jan. 1908 | |
| Description....Sept. 1908 | | |
| Reduced to prac- | | |
| tice.....Oct. 11, 1908 | | |
| | | Further use..... 1908 |
| Working draw- | | |
| ings.....Nov. 5, 1908 | | |
| FiledJan. 21, 1909 | FiledFeb. 17, 1909 | Filed.....Feb. 23, 1909 |
| Commercial use | Made seven other devices | Commercial use |

Callahan and Emtman conceded priority to Smith of the broad issue in the three-party interference—a combination of four elements.

Emtman conceded priority to Callahan of the narrower issue in the two-party interference involving the issue in suit—a combination of five elements.



conduit "in the manner of a boom," and further alleging that the apparatus was described in a magazine, the Engineering Record of January 30, 1909, pages 128 to 130.

We note that *this magazine was not offered in evidence*. Obviously, the article did not disclose the boom. We again emphasize the fact that *the burden of proof is on the plaintiffs to show the use of a boom in the erection of this building*, and specifically, prior to the date of the earliest Coliseum apparatus photographs of August 27, 1908.

On cross-examination Parker testified (R. 451, X-Q. 201) that the pipe was supported at one end "by block and tackle and rope" and "wire, that they tie forms with"; also that he could not "remember that particular point," but that he knew the "general method by which it was supported." He naturally would be as familiar with it as anyone, as he had "complete charge," in association with Mr. Mayberry, as engineer on the building for the architect, and later as superintendent for the Realty Company, Parker having charge of the outside work and Mayberry of the office work. Parker also described further supports consisting of cross-pieces nailed across posts and "it might have been on a brace down to the concrete." It had a swinging extension at the end of the pipe. This description was given *in his own words*, and *makes no mention of a boom*. As the cross-examination progressed, however, plaintiffs' counsel asked him a series of leading questions, suggesting a pan-like affair and the use of a brace. He also suggested the word "boom." These various suggestions were acquiesced in by the witness—see his testimony (R. 451-453, inclusive, X-Qs. 203-225). With reference to the brace, the witness said he could not state "absolutely, positively, that it was used right then at this particular time, although I know

specifically, though, there was a similar device that the pipe was carried on." This might have been, however, toward the end of the year 1908, as the construction of a building of this character usually requires about a year's time. There is nothing definite or positive that this brace or boom was prior to the Coliseum date of August 27, 1908. Furthermore, the description of this boom as a "brace" is in conflict with the testimony of Mr. Engstrum, president of the plaintiff company, given in open court, to the effect that the boom was like the one in the court room before him, *i. e.*, an open lattice boom (R. 588):

"Q. 10. Please describe the apparatus.

"A. The apparatus is nearly similar to this model here with the exception that it was all built of wood, with iron connections, and (fol. 51) the boom was used in a slightly different manner, but the pipe was used suspended under the boom."

(R. 592):

"X-Q. 51. Was this boom you refer to sort of a prop that helped prop up the pipe?

"A. No. It was a boom latticed with wood, similar to this boom." (Witness refers to the model before him.)

The witness also stated (R. 454, X-Q. 230) that the fact that the photograph, Exhibit 44-D, showed no swinging pipe or guy line, justifies the inference that such apparatus was used. We do not understand this ready conclusion. He may have meant that the photograph does not necessarily justify the inference that such apparatus was not used. Certainly there is nothing in the photograph to show that such apparatus *was* used, particularly if the question related to a boom, which is doubtful.

The witness fixed the date of construction of this apparatus, after consulting certain records, as either the last week in 1907 or the first week in 1908. He also con-

firmed the fact that Emtman was general superintendent of the job, whereas Callahan was "one of the straw bosses." Plaintiffs' attorney suggested to him that possibly Lee Callahan had "quite a bit to do" with this chuting apparatus, but the witness replied, "Well, as far as quite a lot to do, I don't remember that." (R. 454, X-Q. 227.) The witness recalled instructions regarding the building of the apparatus as coming from the Engstrum Company, but not as coming from any particular individual.

While Parker is our witness, and testified (though rather vaguely) as to the use of a prop or boom on this Majestic Theater Building, it should be remembered that such testimony was largely in response to very leading questions by plaintiffs' attorney, that the witness lived in Los Angeles and had doubtless seen the development of the gravity system from its inception, and might easily be confused as to just how early the boom was used. Furthermore, he himself took the photographs which are in evidence, and had the boom been such an important feature as plaintiffs now believe it to be, he would undoubtedly have taken photographs of it. The witness' business affiliations naturally allied him with plaintiffs' side of the case rather than with defendants' side. Even under these conditions the witness was *not able to state definitely and positively what kind of a boom was used, when it was used*; nor was he asked by plaintiffs' attorney to make a *sketch* of it, nor could he produce a *photograph* of it. Furthermore, it seems reasonable to infer that such apparatus as was used was more likely to be a development of Emtman's suggestions, or others in the Engstrum organization, than Callahan's, an outsider.

Defendants also called Theodore Emtman as a witness regarding this Majestic Theater Building, but, as previously stated, his memory was utterly deficient in all matters which might in any way have damaged plaintiffs' case. Mr. Bryson was in the room during the taking of the testimony of this witness, as well as of the witness Parker and others, which may have made it more difficult for the witnesses to remember too much detail about Emtman's development work. Even a casual reading of Emtman's testimony shows his extreme bias and his reluctance to confirm even his own prior sworn statements. It is enough for our purpose to quote page 61C as follows:

"Q. 39. I have here a paper purporting to be a record. I will ask you to look at it and refresh your recollection by it, and after you have done so, please state if you were involved in an interference with Callahan.

"(Objection omitted.)

"A. It has nothing that refreshes my memory unless it has got my signature to it.

"By Mr. Barton: The paper here referred to, being a certified copy from the United States Patent Office, is offered in evidence and marked Defendants' Exhibit 58, Certified Copy Emtman Preliminary Statement.

"(Objection omitted.)

"Q. 40. I ask you to read Defendants' Exhibit Emtman's Preliminary Statement, which I now show you, and after reading it, state whether you recall any of the facts stated therein.

"(Objection omitted.)

"A. I do not remember any of it. If the records are there, of course it's there.

"Q. 41. You have read this preliminary statement carefully, have you?

"A. Yes.

"Q. 42. Do you believe this preliminary statement was made by you?

"(Objection omitted.)

"A. I do not remember.

"Q. 43. The question is as to whether you now believe you made such preliminary statement, not as to whether you remember.

"(Objection omitted.)

"A. I do not remember."

Despite this lack of memory the witness recalled readily that apparatus such as Callahan's was used on the Majestic Theater Building (Qs. 55, 56). However, when asked to describe it he mentioned a tower, hoist, bucket, hopper and pipe, but *no boom*. Evidently he was willing to help his company to the extent of forgetting everything that would be damaging, but he would not go to the length of describing apparatus which he knew was not in fact used at the time in question.

The witness was also shown a copy of his deposition in the Canadian suit, and looked it over, but was "unfortunate enough not to remember anything about what is in this copy." The copy itself is Defendants' Exhibit 60 (R. 514).

Another witness called by defendants was K. O. Wetzel, who was employed by the Engstrum Company in 1908. His testimony, in brief, is to the effect that Emtman had charge of the concrete work on different buildings from 1906 to 1910; that he was at the Majestic Theater Building during its construction; and that he identified photograph Exhibit 44-D; also that he knew Lee Callahan, and that Callahan had a talk with him in a general way of an invention that was involved in some litigation in Canada (presumably several years later).

Mr. Bryson was also in the room during this testimony, which may account for the fact that the witness' testimony was not as full and complete as we had been led to expect from a preliminary conference.

The next witness was Luther M. Hill, of Los Angeles, general manager for Charles A. Fellows, contractor—a man who had had twenty-six years' experience on construction work. He stated that his company during a certain four-year period constructed one hundred and forty-nine buildings in and around Los Angeles (R. 519), and that during the last fourteen years he had been in active charge of more than \$1,000,000 worth of work per year, and during the last five years of probably \$2,000,000 worth of construction per year (R. 519). He also testified that he lived within a few blocks of the Majestic Theater Building, passed the building night and morning on his way to and from work, and was particularly interested in the system used to distribute concrete, as it was new to him and seemed to have merit. He described this system (R. 519, Q. 9) in some detail, including a pipe extending from the hopper, which pipe was "supported by a scaffolding and tripods, and was accessible from the scaffolding in order that men might shake it, or otherwise start the concrete to flowing after it had choked up and filled the pipe." He stated that he did not remember having seen a boom used in connection with this apparatus (Q. 11) and that (Q. 13)—

"It was at times possible to see the spout and everything above it, from the time concrete was emptied into the spout, until its discharging end disappeared into wall forms of the building. I believe I would have seen a boom, had there been one."

He also explained (R. 521 and 522) how his company had purchased spouting equipment from the Insley Manufacturing Company for the erection of a building for the Santa Fe Railway Company. This apparatus consisted of spouting suspended from a cable with tackle, with its lower end on a tripod, the lower extension being arranged to swing horizontally. It was taken down,

however, for the reason that it had been determined that "we could place concrete much more economically without the apparatus than with it. Theoretically, it looked practicable, but, in reality, it proved to be very burdensome and expensive."

After the apparatus was taken down Mr. Lee Callahan was sent to remedy the difficulties, and constructed and mounted a long lattice boom on the tower, which boom afterwards collapsed, nearly causing serious injuries to employees. It was stated that this apparatus was "wholly impracticable" and it was taken down, after which they themselves made some sheet iron spouting and a 40-ft. boom and used it, although it was not more economical than depositing the concrete in wheelbarrows. Furthermore, the Insley apparatus was never paid for, nor were they asked to pay for it. The witness also stated that he employs a gravity system wherever conditions make it economical, and that *neither he nor Mr. Fellows pay royalties* on such apparatus.

Another witness was Swan Johnson, formerly employed by the Engstrum Company, who visited the Majestic Theater Building during its construction and saw trestles for supporting the pipes. He testified that he ran across Mr. Engstrum at the building, and that "he was mad, because he said the boys were using too much lumber building towers and trestles for running concrete there" (R. 526, Q. 18). This excess of trestles does not imply a boom, but quite the contrary.

Howard C. Blake, of Chicago, now in charge of the construction department of Morris & Company, the packers, testified that he was on the Pacific Coast from 1906 until the outbreak of the war investigating building conditions there for an Eastern concern, and that he was frequently

in Los Angeles. He made a casual visit to the Majestic Theater Building about February or March, 1908, but saw nothing of any particular interest in connection with the apparatus there used, although he did not go above the lowermost floor. This was the time, however, when plaintiffs allege the boom was being used. The witness also visited the Timkin Building during the summer of the same year, evidently before Callahan had constructed his apparatus, as he recalls nothing unusual in connection with that building either. The witness testified that prior to 1912 he did not hear of or see in use the apparatus which plaintiffs contend was developed in California prior to that date, although it was his business to keep in touch with developments in building construction and knew Mr. Engstrum, Sr., and had a few talks with him.

The witness pointed out the effect of the earthquake and fire on building construction in California and elsewhere, with particular reference to the increased use of reinforced concrete thereafter.

Plaintiffs called Lee Callahan as a witness to testify regarding the development of the invention of the patent in suit. He testified as to an early interview with Mr. Bryson prior to Christmas, 1907, and to a disclosure to him of 4-inch pipes placed on a boom pole to be attached to a tower (R. 68, Q. 5). He states that he had this apparatus ready about the first of January, 1908, and after overcoming difficulty due to the use of too small a pipe, he used the apparatus successfully throughout the remainder of the building construction. The bucket was arranged outside the tower and the hopper inside. The witness said he had made some earlier sketches, which were not preserved, and therefore he made a memory sketch, Plaintiffs' Exhibit A, intended to illustrate this Majestic Theater apparatus. This is the only sketch or

showing of any kind other than the oral testimony of the witness regarding this apparatus. Instead of showing an *upwardly inclined* prop for the pipe, such as suggested by some of the other witnesses, the sketch shows the pipe suspended by a block and tackle and reinforced by a wooden member *on* which it apparently rests, this member being what Callahan calls the boom pole.

A comparison of this sketch with the Smith sketch of the Lynnhaven Hotel apparatus, Defendants' Exhibit 20, as used in the fall of 1906 will show a marked similarity. The first section of chute in each case is supported by block and tackle, the chief difference being that Smith's chute or trough was made of wood whereas Callahan shows a small pipe stiffened or reinforced by a wooden member beneath it and in contact with it.

Contrast this showing of a pipe *on top of* a wooden supporting member with the testimony of Mr. Engstrum, the president of the company, previously quoted, that the pipe was suspended *under* a latticed frame or the so-called boom.

The witness also produced a drawing, Exhibit B, corresponding in general to the apparatus used on the Timken Building and said to have been finished in the month of August, 1908 (however there is no corroboration for this testimony of the witness). A stamped date, December 17, 1908, on the drawing was said to have been on the drawing when it was returned by the patent attorney in Washington. The witness says he showed this drawing to Bryson. Callahan also testified that he took charge of the Timken Building about August 18, 1908, and used from the foundation up, the apparatus of Exhibit B. He also produced a photograph, Exhibit C, showing the apparatus, the photograph according to stipulation having been taken about March, 1909 (R. 74.) This being the only definite date Callahan has established

aside from his patent application, we contend that he is limited in his date of disclosure, and reduction to practice to the filing date of his patent, that is, January 21, 1909, as there is no corroboration for the dates given for the two earlier drawings, and for the tracing dated November 20, 1908, Exhibit D.

Despite this repetition of our contention made before the District and Circuit Courts, petitioners have the temerity to assert on page 37 of their brief that we "admit the existence of the Callahan apparatus in the Timken Building in San Diego in the summer of 1908, as shown by Petitioners' Exhibit C." We have made no such admission.

Callahan testified in answer to the question when he first conceived the apparatus, described very specifically in Q. 60, that he first conceived it in 1901. His preliminary statement, sworn to August 9, 1909, however, gives the date of conception of the same apparatus as July 15, 1907. He also testified, Q. 61, that he had no conversation with anyone regarding this apparatus until his disclosure to Mr. Bryson shortly prior to Christmas, 1907, while in the preliminary statement he swore that he "First explained the invention to others on about August 15, 1907." As he did not reach Los Angeles until about November 18, 1907, this earlier date indicates, not a mistake as to time but a disclosure to some other party in some other city, which party was not called as a witness to corroborate this affidavit. He also testified regarding a certain prior use of wooden chutes in a crude way in 1901, 1903, 1904 and 1905.

The witness on cross-examination recalled the interference with Emtman and Smith but felt that Smith had copied his apparatus and had previously visited his work. This, of course, was impossible, as Smith had the St. Louis Coliseum apparatus in operation in 1908, several

months earlier than any date Callahan has been able to establish for his Timken Building apparatus and Smith in 1906 was using apparatus in Norfolk, Va., very similar to the sketch, Exhibit A, said to have been used by Callahan in the earlier part of 1908. Callahan admitted in substance that the apparatus of his patent and of Smith's patent were substantially the same, that is, the differences were minor structural features. Having *conceded priority* to Smith of certain broad claims not involving the detail of a boom for supporting the chute, as distinguished from any support whatsoever, Callahan's patent involves little, if anything, over the Smith patent which represents an earlier apparatus, the St. Louis Coliseum.

With reference to Callahan's testimony regarding his apparatus on the Majestic Theater Building, we note that although he claims to be responsible for said apparatus and his assignees now regard it as an important date of invention, *he did not regard it as of sufficient importance to take photographs of it*, saying (R. 82, X-Q. 88), "I had no occasion to take them and did not care anything about them," whereas, on the Timken Building (R. 85, X-Q. 110) he had photographs taken of the building "from the beginning of the work clean through the work," although Exhibit C (taken in March, 1909) is the only one he has left. This picture was taken to show Callahan with his arm pointing directing the work. It and the others were evidently taken because Callahan felt that he had done something original, of which he wished to keep a record. If he had been responsible for the Majestic Theater apparatus in any way other than as a workman carrying out instructions given him by his superior, it seems reasonable to suppose that he would have had sufficient interest to take photographs of that apparatus also, or to

have obtained copies of the photographs taken by the company, or by Parker, and to have retained them.

The witness testified that he *did not know* Mr. Emtman at the time of the Majestic Theater Building work, had never heard of him, and only knew him casually at the present time. Evidently Callahan's work on that building must have been of a very minor character or he would have come in contact with the general superintendent. Callahan admitted (R. 82, X-Q. 94) applying for a position, "whatever the opening might be," and starting as a "journeyman" and afterwards being "what you might call a straw boss, supervising the carpenters for the form work." It seems inconceivable that he should have invented the apparatus used on that building without even knowing the superintendent who was a stockholder in the company, and in very close touch with the other members of the Engstrum organization, all of whom were much interested in the apparatus as first used in January, 1908.

This situation confirms our contention that Callahan was in no way whatever responsible for this Majestic Theater apparatus, but having seen it operate and gained some experience on this work, coupled, perhaps, with his prior knowledge that concrete could be made to flow through wooden chutes—a knowledge that he shared in common with many others—he developed his first apparatus in the fall of 1908, his idea apparently being to provide an apparatus which would swing through a wide angle and reach as much of the floor area as possible to overcome the inconvenience of locating the pipes on the temporary falsework, as was done on the Majestic Theater Building.

The witness states he told Mr. Bryson a short time before he went to San Diego, that he was going to apply for a patent on his apparatus (R. 84, X-Q. 105) but

there is no confirmation for this statement and he testified later that when the interference was declared he sent the necessary information to his attorney "without consulting Mr. Bryson or anyone else" (R. 88, X-Qs. 131 and 160, 161). The witness confirmed Mr. Bryson's testimony as to the purchase of his patent by the company for "proper compensation" (R. 87, X-Q. 127).

The witness was also shown a copy of his 1914 deposition in the Canadian suit and identified it in substance. He also identified, in a general way, the Vancouver apparatus of Insley involved in the suit, Defendants' Exhibit 45. In discussing this apparatus he admitted that booms had been used for many years (R. 90, X-Q. 142). "There is not much difference whether you operate with a cable or a boom" (R. 91, X-Qs. 146-149). The witness attention was to the fact that in the Canadian testimony he stated that he first used his completed apparatus on the Timken Building, San Diego, and he confirmed this testimony in substance. When asked if he would now wish to modify these answers in this earlier deposition, he gave a long confused answer (R. 98, X-Q. 178), from which we are unable to draw any conclusion. However, on redirect examination his attorney suggested to him that he probably misunderstood X-Q. 31 of his Canadian deposition (R. 96) and was thinking of his U. S. application instead of his Canadian application, thereby advancing the date in question about a year, to which the witness agreed. However, X-Q. 31 referred to is perfectly clear and the testimony given at that time (shortly before the St. Louis depositions were taken), when there was no particular advantage in establishing an earlier date, is much more convincing than the present testimony in which a few extra months would be exceedingly valuable to plaintiffs. His attorney also asked him what apparatus he had in mind

in his preliminary statement alleging reduction to practice October, 1908, and he immediately took advantage of the opportunity to point out that his apparatus was "perfected on the Majestic Theater," which would give him a date of January, 1908, instead of October, 1908 (R. 100, R-D. Q. 184). None of this testimony, however, is particularly convincing in view of the extreme necessity plaintiffs were under of carrying their date back from October to January to avoid the St. Louis Coliseum defense. The witness' last answer is of considerable interest (R. 104, R-X Q. 197), in which he says:

"I have used a similar little pole, boom pole, to stiffen or to carry for sections of my work, for instance, the Majestic Theatre Building. This boom pole, or a like pole, can and has been used as any other boom pole that would be built, that you may call my attention to, in the lattice construction, like I used on the Timken Building. I also showed what I call a yard arm or round pole used there on the Timken Building, in the photograph which I have presented in evidence here."

Plaintiffs can hardly support a claim for a broad pioneer patent on any such statement as this.

C. W. Ellis, of New York, managing engineer of the Concrete Appliances Company from the spring of 1910 to the fall of 1912, was called by defendants as a rebuttal witness, the end of November, 1921.

By way of explanation it should be said, that at the open court trial in October, 1921, F. E. Engstrum, the president of Concrete Appliances Company, testified that the Majestic Theater Building apparatus had a boom, similar to the model produced by plaintiffs in court (but not in evidence); also that Lee Callahan "was the designer and originator of that apparatus," and that the boom was "latticed with wood" similar to the open lattice work boom of said model (R. 592, X-Q. 51). De-

fendants had previously taken testimony to establish the use of boom supported pipe sections mounted on a tower on a floating barge used in building certain docks in San Francisco by the Healy-Tibbetts Company, the date alleged by Mr. Horton and others connected with the company being 1906 and subsequent years. By way of rebuttal, Engstrum testified in open court that Parrott & Company, their San Francisco agents, prepared the designs for a barge of this character in 1912 for said Healy-Tibbetts Company and that said company paid royalties to the plaintiff company through the Parrott Company, their agent; also that the witness had knowledge of these negotiations leading to the granting of a license to said Healy-Tibbetts Company and that no statement was made by the Healy-Tibbetts Company alleging use of similar apparatus at an earlier date, as Mr. Horton and others connected with said company had previously testified.

Ellis, in his deposition referred to (R. 559) testified that while he was with Concrete Appliances Company he was used as a promoter and salesman in introducing and putting the G. Y. (gravity) system of distributing concrete on the market and that in this system the concrete was handled through pipes and afterwards through open troughs (Q. 4). He said that he was personally responsible for the making and issuance of the catalogue, Defendants' Exhibit 59, containing photographs of various buildings in that vicinity by the plaintiff company, that the Concrete Appliances Company was practically a subsidiary of the F. O. Engstrum Company, in which Mr. Emtman was a general foreman; that he knew Mr. Bryson, as well as Mr. Engstrum, Sr. and his son; that Mr. Bryson held a position in both companies and had the final say with regard to the policy in all matters; that Mr. Bryson was interested in all patent debates, but

left most of these matters to their patent attorneys and to the witness.

Ellis also testified that while with the company, he was instructed and always had his eyes open, when he was traveling around the country, for anything that might show prior use of their gravity system of distributing concrete (Q. 17) and (Q. 11) that the officers of the company "were always interested to know what the attitude of the other contractors was toward the Concrete Appliances Company." The witness states (Q. 18) that he "ran across two claims of priority, one by Healy-Tibbetts Company of San Francisco, and the Great Lakes Engineering Company of Chicago." (He probably meant the Great Lakes Dredge & Dock Company of Chicago.)

Upon being asked to explain this Healy-Tibbetts matter more fully, he stated that he ran into it on one of his visits to San Francisco when he was soliciting business for Concrete Appliances Company; that the engineer of the Healy-Tibbetts Company at that time informed him "that they had been using this method of distributing concrete in the construction of docks on some government work prior to the San Francisco fire or earthquake, and used it very extensively after the earthquake on the rebuilding or repairing of docks which were destroyed"; also that he told the witness where he could find a barge, which was then tied up at a dock; that witness "looked this apparatus over and found that it embodied the general features of the G. Y. system, the barge having a tower of about 30 feet, and concrete hoist, hopper, and about 20 feet of pipe, which was so attached that it could be swiveled from the discharge end of the hopper, together with other apparatus which was not assembled." The witness states that he took photographs of the apparatus at the time and wrote the company about it. This was the spring or summer of 1911 (Q. 42); also that he

discussed this prior use with Mr. Bryson and Mr. Emtman, but they did not see at that time that it had a direct bearing on building construction, although the witness believes Mr. Bryson recognized that the structural features of this apparatus were similar to their gravity system, ignoring the possible differences in application as between marine work and building construction.

Witness testified that all licenses issued by Concrete Appliances Company under the patents covering their gravity system, were issued after his connection with said company (the spring of 1910) and that the record of all sales and inquiries were sent to him personally for correction and approval. He also testified that while he was with Concrete Appliances Company, the latter did *not sell* any gravity system to the Healy-Tibbetts Company, *nor did they license* said company to use their apparatus, and that he would have known of such sales had they been made. He knew, of course, the Parrott Company, of San Francisco, were agents of Concrete Appliances Company, but stated that The Parrott Company could not have furnished the Healy-Tibbetts Company with drawings and specifications of such apparatus without violation of their agency contract, and the inference from his testimony is that he would undoubtedly have known if any deal had been made.

The witness testified that he was a graduate of the University of Michigan, in mechanical and electrical engineering, and had extended experience in the designing of engineering apparatus used in construction work. The witness was handed a copy of the Callahan and Emtman patents owned by Concrete Appliances Company and asked if either of the structures therein were used or sold by said company or the Engstrum Company. He replied that fundamentally they covered the apparatus, but not in detail. He also stated that ignoring the details of

construction, the Emtman patent was the one which illustrated the construction utilized by the company while he was with them and that the structure shown in the Callahan patent was not used during said period, which, it will be noted, was later than the date of the Timken Building begun in the summer of 1908 and finished probably during the latter part of 1909. The witness testified that

“We experienced all the troubles which a new industry goes through in the process of evolution, such, for instance, as the falling down of towers, breaking of booms, congestion and uselessness of pipes, and the eventual success of the open trough” (R. 563),

which latter was adopted during his association with the company. In other words, *the apparatus was not on a satisfactory basis* until at least as late as the spring of 1910, when witness' employment with the company began. The witness explained more fully that the open trough was adopted while he was in Chicago consulting with Witherspoon-Englar Company, due to the failure of apparatus which they were operating on the closed pipes, and that he received a wire from Los Angeles that Mr. Snooks, a foreman, had overcome this congestion by converting his pipes into troughs.

HEALY-TIBBETTS COMPANY'S APPARATUS, SAN FRANCISCO.

Defendants took depositions in San Francisco in May, 1921, to prove the use of concrete distributing apparatus on a barge used in building docks in San Francisco. The apparatus was said to comprise a tower, a hoist, a hopper, and pipes extending therefrom and supported by a boom, this apparatus, according to the witnesses, having been in use at the time of the earthquake and fire in 1906, and used for several years subsequently.

The first witness, Charles C. Horton, testified (R. 527) that he was vice-president of the Healy-Tibbetts Construction Company and had been with them since 1892. Briefly stated, he described the barge apparatus in great detail, and testified at considerable length regarding its use on Piers 42 and 44 in San Francisco in 1906, and subsequently on other piers, including 36 and 38.

The witness stated that the barge had been dismantled for the last eight or ten years, but that he had inspected what was left of it lying in the water that day. A drawing of the apparatus, as it was said to have been used in 1906, was prepared during the testimony and was discussed by the witness—see Exhibit 61. The witness was cross-examined as to all the foregoing testimony.

Another witness was Martin E. Brown, superintendent of construction for said company, who had been with them twenty years or more (R., 534). He stated that he was in immediate charge of the work in question, and also described the apparatus at considerable length. He stated that the drawing referred to was prepared under the direction of Mr. Horton and himself. He described the apparatus in great detail, and was also carefully cross-examined with respect to it. The witness produced a rusty, conical hopper, which he said he showed to plaintiffs' attorney a few days before, and which he had taken from the water and brought into the office. It was said to be a part of the original apparatus—the upper end of the pipe section which was attached to the hopper (R., 548, Q. 96). It was offered in evidence as Exhibit 62.

Another witness was Fred L. Ayre, 53 years old, who had worked off and on for the Healy-Tibbetts Company for twenty-five years (R. 624). He also identified the barge apparatus and thought it was used on Pier 42. At

any rate it was before the fire. The witness identified Exhibit 62 as a piece of pipe, the same or similar to the one used in all the work. He was also cross-examined quite fully (R. 582).

In open court, in October, 1921, plaintiffs called F. J. Ginsberg (R. 582), who testified, in substance that he was employed by the Healy-Tibbetts Company shortly after he reached San Francisco, August 27, 1906, giving the date entirely from memory, and that he saw no such apparatus as the barge apparatus, in use by them. However, his work was on various buildings rather than on dock work. He also testified that the pipes shown in the drawing, Exhibit 61, would not convey the concrete, and that the piece of pipe, Exhibit 62, was evidently part of a trémie, that is, a series of pipe sections hung vertically in order to deposit concrete under water. On cross-examination it developed that he is now connected with the company that sells Insley equipment in New York City.

The president of the Concrete Appliances Company, Mr. Fred E. Engstrum, also testified on behalf of plaintiffs in open court in October, 1921 (R. 588). He stated he was also president of the Newport Ship Building Corporation, Wilmington, North Carolina, and was completing "\$7,000,000 of concrete ships," presumably for the government. His testimony regarding the use of an open lattice boom on the Majestic Theater Building, has already been discussed. He testified also that his company's San Francisco agent, Parrott & Company, designed a barge apparatus for the Healy-Tibbetts Company in 1912, and that the latter paid royalties to said Parrott Company for the Concrete Appliances Company, and that he had personal knowledge of these transactions and of the negotiations leading up to the *granting of the license* to the Healy-Tibbetts Company at that time.

He also stated that the Healy-Tibbetts drawing, Exhibit 61, showed a conduit through which concrete could not be poured, unless it were practically vertical, although he admitted that the concrete would flow if the slope was fairly steep (X-Q. 277). Plaintiffs' attorney brought out most of this testimony through a series of very leading questions, causing the court to remark that the "impression you get from the answers to these questions does not help that side" (plaintiffs side). The witness also referred to the fact that Emtman had been a stockholder in his company, and had been associated with Mr. Bryson, Engstrum's brother-in-law, in various business enterprises outside of the Concrete Appliances Company.

This open court testimony of plaintiffs regarding the alleged payment of royalties by Healy-Tibbetts Company in 1912 *was not supported in any way by the production of books* either from the Concrete Appliances Company's files or those of the Parrott Company, to whom their royalties were said to have been paid, although plaintiffs had had several months to prepare for this open court testimony. Nevertheless, defendants felt that it threw a cloud on their San Francisco depositions, and therefore obtained permission to take surrebuttal testimony.

The San Francisco surrebuttal opened with a stipulation regarding the testimony of James Byrne, substantially fixing the dates for the building of Piers 42 and 44 as the spring of 1906. (R. 613.) After this Mr. Horton was called as a witness to confirm the date and the fact that this company was paid \$5000 as a bonus in connection with this work, in view of the emergency occasioned by the earthquake and fire. Mr. Horton denied (Q. 14) the payment of any royalty to Concrete Appliances Company or the Parrott Company. When asked regarding

the use of this apparatus of 1906, the witness expressed some doubt. On cross-examination he stated that the apparatus previously described "is subject to mistakes that may arise in a man's memory concerning something that took place fifteen or twenty years ago," and left the impression that he was in doubt as to the pier on which the barge apparatus was used, and that he was "in doubt as to the exact character of the concrete distributing plant that was used on Piers 42 and 44." The witness re-examined the drawing, Exhibit 61, and suggested a few corrections in it. However, in conclusion, he stated that he was "reasonably sure that the barge was used on a part of the concrete work" (the 1906 dock work), but he was not sure that "the boom attachment and other improvements were a part of the equipment at that time." The witness was shown a copy of a recent affidavit of December 1, 1921, confirming his prior testimony, and stated that the affidavit represented his recollection at that date, as well as in the early part of the year, when he gave his first deposition. He made the further statement that this uncertainty had arisen during "the last two or three weeks." (R-D. Qs. 58-60.)

This doubt, which the witness stated had arisen in his mind during the last two or three weeks, naturally raises an inquiry in the minds of defendants as to what could have occurred to cause the witness to recede somewhat from a position of which he was apparently very sure when subjected to a thorough cross-examination in May, 1921, at which time he had had several weeks' notice of the proposed testimony and ample opportunity to refresh his recollection. Also he received an inquiry from defendants' counsel in October, 1921, very shortly after the open court testimony, with reference to said testimony and replied in a letter *confirming* his prior testimony and denying the royalty payments, which letter was made the

basis of the motion for surrebuttal testimony. Following this he *signed the affidavit* of December 1, 1921, copied into the record, again confirming the facts just referred to.

Plaintiffs, at the time the court signed the order for surrebuttal testimony, December 30, 1921, asked and were granted thirty days in which to investigate the situation set up by defendants' affidavits, although they had had since the preceding spring to investigate this entire subject-matter and had an associate counsel in Los Angeles, Mr. Lyon, who attended the San Francisco depositions in May, 1921.

At the end of this thirty-day period Horton was called as a witness and although he had three times alleged the main facts with reference to this 1906 use, twice under oath, he became uncertain as to the use of the apparatus at a very critical date previously relied on.

Defendants have no desire to obtain the benefit of a date concerning which there may be any honest doubt, or to follow the practice of the plaintiffs in the Sixth Circuit and obtain a decision based in any way on a misleading presentation of facts. Nevertheless, the sudden weakening on the part of this witness is significant and is not entirely convincing. He stated (R-D. Q. 49) that since the case has been brought to his attention he has talked to his associates and other men who were engaged in the construction of the piers in question, indicating that the doubt has arisen by virtue of these conferences with others, and as stated in the answer previously quoted, within the last two or three weeks.

If our other prior witnesses were also uncertain, it would appear that there was reasonable doubt as to this early apparatus. However, Fred L. Ayer was again called as a witness and was as certain of his testimony as in the first instance. It will also be recalled that the

witnesses in their original testimony associated the apparatus with the time of the earthquake and fire, a catastrophe so unprecedented that the work on these piers 42 and 44 would naturally stand out above all other construction work on which they had been associated at any time in their lives. Furthermore, Ellis testified that when he saw this apparatus in 1911 he was informed by a representative of the Healy-Tibbetts Construction Company that they had been using it since about the time of the earthquake, and while this is hearsay, it is of some interest as showing even at that early date, the apparatus was associated with this great catastrophe.

Furthermore, the reply testimony taken by plaintiffs in February, 1922, immediately after the surrebuttal testimony of Horton and Ayer, to a certain extent corroborates this surrebuttal testimony in one very important respect, and that is, as to the existence of apparatus of this character at least as early as the early part of 1909 and considerably earlier than the 1912 date sworn to by Engstrum in open court as the time when a license was granted to Healy-Tibbetts Construction Company and royalties paid for the use of apparatus of this character. The testimony of the plaintiffs' witness, which we are about to refer to, therefore *rebutts their own open court testimony* and tends to discredit all their testimony.

Plaintiffs' first reply witness (R. 607) was Robert Tibbetts, 60 years old, formerly with the Healy-Tibbetts Construction Company, of which Mr. Horton is now vice-president, but who left that company in December, 1910 (X-Qs. 26, 27), and started a rival company, known as the Tibbetts Pacific Company, engaged also in constructing concrete wharves and structures of this kind (X-Q. 35). The fact that Mr. Tibbetts is now in a rival business and having a name which might be confused with his early company, in view of the name Tibbetts in both company

names, suggests that Tibbetts may be hostile to defendants. This conclusion is confirmed by the remarks hereinafter quoted with respect to two of defendants' witnesses.

Tibbetts testified in substance, that he supervised the construction of Piers 42 and 44 and that all of the concrete was deposited from cars or buggies, there being no floating apparatus at all used in connection with these piers. He also testified that barge distributing apparatus was used in the construction of Pier 38 and produced three photographs, Plaintiffs' Exhibits O, P and Q, dated, respectively, May 25, 1909, February 24, 1910, and April 8, 1910. The apparatus shown in these photographs comprises a barge with a tower, hoist, hopper and pipe hung herefrom, loosely by chains; that it could be swung about through a limited angle, two of the photographs showing the pipe held out from the tower in an inclined position by a prop or brace tied to the tower and able to swing through a limited angle after the manner of a boom. In fact Exhibit Q shows it pulled a little to one side by a man holding a rope attached to it. This apparatus, of course, does not correspond in detail to the apparatus of the sketch, Defendants' Exhibit 61, but does show the essential elements of the combination in suit, that is, the five elements—tower, hopper, hoist, boom and conduit. The witness testified that this apparatus was the first one ever built by the Healy-Tibbetts Company, and was built at the start of the contract on Pier 38, which was not sixty days prior to the date on the panorama photograph, Exhibit O, May 5, 1909, in other words, it was not built earlier than the end of March, 1909.

Plaintiffs' other witness, Mr. Kebby (R. 597), herein-after referred to, states that it was built about January or February, 1909. The January date would be earlier than Callahan's filing date. In any case, this apparatus

evidences an invention independent of Callahan and was at a sufficiently early date to antedate the alleged license testified to by Engstrum by three years, and confirms Ellis' testimony in part, at least. The use of this apparatus early in 1909 by no means negatives the existence of earlier apparatus by the same company in 1906, particularly as Tibbetts is the only witness who states that this was the first apparatus used, whereas Martin and Ayer allege quite positively an earlier 1906 apparatus, and Horton seemed quite sure of it until the last two or three weeks before his surrebuttal testimony.

The witness Tibbetts stated that he was acquainted with defendants' prior witnesses, Horton, Ayer and Brown, stating that "Ayer was just a common workman," and that all three of them "are only boys that were carrying tools and were keeping time for me, that had nothing to do with the work, no more than an office boy here." This refers to Piers 42 and 44 in 1906. Upon counsel's inquiry as to whether the witness did or did not see them in connection with the work on Piers 42 and 44, Tibbetts answered:

"Well, I don't know how to answer such a question. They were both in my employ and I must have seen them, but I never discussed what I was doing, because they were *merely children* to me."

This contemptuous reference to the witnesses suggests a very hostile attitude, and taken together with the fact that Tibbetts now heads a rival company, might well suggest caution in accepting his statements at their full face value, particularly on those vital points, as to which he is the only witness.

Fred Ayer was 53 years old at the time of his first deposition and would therefore have been 38 years old at the time of the earthquake, and has worked for the Healy-Tibbetts Construction Company off and on for twenty-five years.

Horton, who at the time of his 1921 deposition was 44 years old, would have been 29 years old at the time of the San Francisco fire, and considering that he is now the vice-president of the company, must have been a competent man at the time, more than a mere child, and certainly competent to recall the history of his company during the subsequent period, although it seems to be agreed that as far as the 1906 work on Piers 42 and 44 were concerned, Horton's work was not so much outside work and "did not come in daily contact with the rig in question while operating," and, therefore, had "only a general knowledge of what took place." (Horton's surrebuttal testimony, R. 616, X-Q. 24.) However, when asked whether Mr. Tibbetts' recollection as to the apparatus used at that time and the time of its first use would be more likely to be correct than his, the witness stated, "Well, I wouldn't say any more correct than mine, no." (X-Q. 29.)

Martin E. Brown, whose age was not given in the first deposition but who had been with the company "20 years or more," and in the year 1905 and up to the time of the earthquake "was superintendent of construction for the Healy-Tibbetts Company," stated that he was "in immediate charge of that work as overseer" (R. 534, Qs. 2-6). Obviously, he was more than "a mere child," as Tibbetts stated in an effort to discredit him.

That this barge apparatus was an independent invention entirely independent of Concrete Appliances Company or Callahan, regardless of whether it was used first in 1906 or 1909, is evidenced by the last six questions and answers in Tibbetts' deposition to the effect that he has never heard of Callahan, Emtman, Bryson, Concrete Appliances Company or Insley.

Plaintiffs' other witness, H. M. Kebby, testified that he was chief inspecting engineer of the State Harbor Com-

mission at the time Pier 38 was built. (R. 598.) He identified the three photographs referred to as having been taken by himself on the dates indicated thereon 1909 and 1910. It is to be noted that the panorama photograph, Exhibit O, shows two barge distributing equipments, each with a tower, hopper and pipe. If this was a new and experimental type of apparatus as Tibbetts would have us believe, it seems unlikely that the Healy-Tibbetts Construction Company would contract for two of them at the very outset.

Photograph A shows Pier 38 apparently in the very early stages of the concrete work. It is likely that if this were a new type of apparatus at that time, the company would have built one such apparatus first and have experimented with it throughout the building of the dock, and then if it proved successful and satisfactory, have built others like it at a later date. Two such barge equipments in the photograph at the very beginning of the work, is strongly persuasive that one or both of them had been used on earlier pier work, and in any case, earlier than Callahan's filing date of January 21, 1909, and in successful use two or three years before Callahan's apparatus had been changed enough to make it successful. In this connection, the earliest actual photograph of Callahan's apparatus, which plaintiffs had been able to offer in evidence, is given a date by stipulation of "about March, 1909." It should be recalled that this Kebby photograph, although plaintiffs' exhibit, is not in evidence to prove plaintiffs' case affirmatively, but is relied on by defendants' in support of their contention of prior use by Healy-Tibbetts Construction Company.

The witness explains that this apparatus could be swung only a short distance. However, there is no limitation in the claims in suit as to the angle through which the conduit is to be swung. Also the boom in these Kebby

photographs is a very crude affair, but notwithstanding, holds the pipe out and in an inclined position, in the same manner that defendants Philadelphia apparatus type 3 involves an inclined prop or support for holding out the chute, but on a flatter incline.

There is nothing in the testimony of witness Kebby to indicate that either of these two barge equipments might not have been used at an earlier period.

The witness was asked regarding his knowledge of pipes for distributing grain and claimed that those he had seen worked on an "entirely different principle" than the apparatus of the photographs. However, as the principle consists merely in elevating the grain or the concrete, as the case may be, to a hopper permitting it to flow from the hopper to an inclined pipe and from the inclined pipe to some other receptacle, the point of delivery being varied by moving the lower end of the pipe, the difference in principle is not apparent nor is it explained by witness. It is also interesting to note in one of these photographs, Plaintiffs' Exhibit Q, the lower section of pipe apparently telescopes over the next higher section, and is held in place by block and tackle, presumably for the purpose of pulling it up and down to increase or decrease the effective length of the pipe as a whole, almost exactly the arrangement of the Ballinger grain spout discussed by numerous witnesses for defendant and shown in the 1898 Ballinger patent elsewhere explained herein. The chief difference between this apparatus and the swivel pipes, booms and hoppers used on grain elevators for the last twenty years, is that the San Francisco apparatus is considerably cruder than the earlier prototype, which must obviously have been in existence in San Francisco at least as early as the time of the earthquake in connection with the very large shipping business centered there.

The Claims in Suit Are Invalid (B) As They Do Not Cover Patentable Combinations But Mere Aggregations of Several Elements.

Each of the five elements of the claims in suit is admittedly old. The record also shows, and we believe it has been conceded, that the standard apparatus used for hoisting and distributing concrete at least as early as 1906 consisted of three of these five elements. The Ransome Concrete Machinery Company, for example, supplied contractors with a tower, hoist and hopper from which the concrete was discharged into wheelbarrows. In some cases a short chute conducted the concrete from the hopper to the wheelbarrows or directly to the forms. Entirely aside from the prior uses of the complete combination referred to elsewhere in this brief, we maintain that the addition of two elements—a pipe and a boom—to the standard Ransome outfit results in a mere aggregation. Also considering those prior cases where a short chute was previously used with the Ransome equipment, we maintain that the mere addition of a boom results in an aggregation rather than a patentable combination.

In either case, the boom acts exactly as all other booms act. Its functions are not changed in any manner. It merely supports whatever is connected to it and it can be swung from one side to the other, carrying with it the member suspended from it. The chute performs exactly the same function that any chute performs and is not affected by being associated with the tower, hoist and hopper, or with the boom.

Judge Hollister, in the District Court in the Cincinnati suit, said with reference to these identical claims (see pages 43 to 46 of the "Joint Exhibit for Plaintiffs and Defendants"):

"The apparatus have great utility but no novelty, and mere aggregations of elements, each of which is admittedly old. It will be observed that there is no claimed peculiarity or novelty in the form or construction of any element making up the complete structures claimed by plaintiffs to be valid combinations. Each element undertakes and completes its function in the old way and without producing any new results. There might also be added means for mixing the concrete and means for hauling the various constituents of concrete to the mixer."

We agree with this analysis which follows the line of reasoning adopted by the Supreme Court of the United States in a particularly pertinent case relating to the elevation and distribution of grain from a hopper through a spout. The case was *Richards v. Chase Elevator Co.*, 158 U. S. 299; *Id.* 159 U. S. 477. In the first of these cases it was said by Mr. Justice Brown:

"The patent in question is for the combination of (1) a fixed or stationary building; (2) two railway tracks, (3) an elevating apparatus; (4) elevator hopper scales, having a fixed or stationary hopper, provided with a valve or slide in its bottom; (5) a discharge spout, arranged for discharging the grain directly from the hopper into a car.

"Unless the combination accomplishes some new result, the mere multiplicity of elements does not make it patentable. So long as each element performs some old and well-known function, the result is not a patentable combination, but an aggregation of elements. Indeed, the multiplicity of elements may go on indefinitely without creating a patentable combination, unless by their collocation a new result be produced. Thus nothing would have been added to the legal aspect of the combination in question by introducing as new elements the car from which the transfer was made; the engine that drew such car; the steam shovel; the engine that operated the shovel and the elevator; as well as the locomotive which drew the loaded car from the building, though these are all indispensable features, since each of

them is an old and well-known device, and performs a well understood duty.

“Not a new function or result is suggested by the combination in question. The cars run into the building on railway tracks, as they have done ever since railways were invented. The building is fixed and stationary, as buildings usually are. It is no novelty that it should contain an elevating device, and that the latter should raise the grain to the hopper scale, and should discharge it either into a bin or a vessel, or into another car. In principle it makes no difference which.

“In fact, the combination claimed is a pure aggregation, and the decree of the court dismissing the bill is, therefore, affirmed.”

See also *Reckendorfer v. Faber*, 92 U. S. 347; 23 L. Ed. 719, where the court says:

“The mere bringing together of old parts and allowing each to work out its own old effect, without producing some new machine or product, is not invention. It is necessary always to determine whether the conception of a combination of old parts results from the intuition of the inventor as distinguished from the skill of the mechanic. A combination of old elements to be patentable must produce a different force, or effect, or result in the combined force or processes from that given by their separate parts. There must be a new result produced by their union; if not, it is only an aggregation of separate elements.”

See also:

Simon Florsheim et. al. v. Gustav Schilling, 34 U. S. 64.

County of Fond du Lac v. Sarah May, 34 U. S. 395.

Busell Trimmer Company et. al. v. Frank Stevens et. al., 34 U. S. 423.

(C) Combination Claimed Does Not Represent Invention, But a Natural Evolution in the Art.

Prior to the introduction of reinforced concrete most concrete was in large masses, such as foundation work, etc. The practice twenty years ago in most cases was to specify concrete with so little water that it would quake when tamped, being somewhat jelly-like in this respect. Concrete will resist great compression, but very little tension. Steel reinforcing bars began to be used, among other purposes, to enable the concrete to resist tension, where it is used, for example, for floor slabs and girders.

For this purpose a good bond between the steel and concrete was essential. In order to obtain close contact more water was naturally used, resulting in a thinner mixture which would flow around the bars and adhere thereto upon hardening. This development is described by numerous witnesses. Some of the witnesses also ascribe the use of more water to the introduction of batch mixers; and the grain engineers say it was partly due to the use of tighter wooden forms, which would prevent the surplus water from leaking out. In any case the change from dry to wet concrete was coincident with the introduction of reinforced concrete building, the first tall office building of this character being the Ingalls Building, built in Cincinnati in 1902.

The San Francisco fire in April, 1906, was said by some of the witnesses to have done much to call attention to the advantages of reinforced concrete, and therefore to have stimulated the development of this art.

Whatever the reasons may be, the fact is clearly established that wetter concrete, resulting in a thinner mixture which could be readily poured through chutes and pipes, came into vogue during the period from 1900

to 1915. Under these conditions contractors scattered all over the country began to use chutes and pipes more extensively, and of considerable length, whereas formerly only very short steep chutes had been used in foundation work with drier concrete.

This development was nothing but the natural evolution of the art, which no one is entitled to monopolize. In using the pipes or chutes they necessarily had to be supported and moved about to cover the entire area in question, and the various users supported them by the various well-known means available, such as trestles, cables and booms. The use of these supports involves therefore merely the selection of appliances or tools of the art available for a similar use in connection with the distribution of grain, coal, ore, sand and other material, and it involves no invention whatever.

If contractors generally had been seeking some new and improved method of distributing concrete other than by carts and wheelbarrows, if the testimony showed that numerous attempts had been made to find some improved method but in vain and if under these conditions some one genius had taken the grain-distributing apparatus, such as used twenty years ago, comprising an inclined pipe supported by an inclined boom capable of swinging through a half circle, and had re-designed and modified that apparatus to adapt it to convey concrete, on the assumption that it had not been possible to convey concrete through it prior to these changes; if under these conditions the alleged genius had obtained a patent on these particular structural features or details, as a result of which such apparatus for the first time was successfully used in conveying the concrete, and thus solved the problem which had baffled others for years, such patent would be entitled to universal respect and should be sustained.

However, where, as in the present case, there has been no long sought-for solution for a new method of distributing concrete, but where, instead, there has been a natural evolution in the art resulting in wetter concrete capable of flowing through pipes, as contrasted with dry concrete which would not flow through pipes, but which would clog them, and would not flow through chutes unless they were very short and steep; and where the acceptance of the wetter and more plastic concrete was followed immediately, over a period of several years, by the use of chutes and pipes from the Atlantic to the Pacific by contractors largely out of touch with each other's work; and where in some cases the equipment used was taken practically bodily from the grain-distributing art, and the hoppers, swivel connections, pipes and booms were used bodily, with practically no changes whatever, except possibly to make them of a little heavier steel, such almost universal adoption of the apparatus is strongly persuasive that no invention was involved in such use, but that such use is a natural and inevitable step ahead which was bound to materialize regardless of which of these numerous parties happened to try it first.

The Third Circuit Court of Appeals fully appreciated this situation, as shown by its opinion in which, after referring to the priority contest in which Callahan was involved, it states that these things

“all serve to show that at or about the same time the natural mechanical evolution of the concrete art and the possibility of the use of wet concrete, mechanically, but instinctively, led all these men to adopt the same general types of mechanical appliances for the chuting of wet concrete.”

The opinion also includes the following:

“Moreover, a study of the proofs satisfy us that from the time concrete came into use there had been a struggle between the architects and designers, who,

as a class, favored the use of dry concrete which would not flow, and the contractors, who, for construction convenience favored wet or mush concrete, which would flow and therefore allow the use of distribution chutes, and that as soon as the use of wet concrete became general, the art used the wet concrete chutes, which it could not use for the dry."

The claims of the patent in suit are, therefore, clearly invalid for this reason, as they cover what has proved to be a natural evolution in the art.

As stated in the analogous case of *Mallon et. al. v. Gregg et. al.*, C. C. A., 8th Cir., 137 Fed. 68, p. 79:

"... The case is one in which the art was not developed in a single leap by one great genius, but in which many men have contributed both the genius of inventors and the skill of mechanics to its progress, and the advance in it has been gradually made, step by step. . . ."

Also in *Elliott v. Youngstown Co.*, 181 Fed. 349, 104, C. C. A., 179, the court remarks:

"The fact that so many persons caught the idea goes rather to prove that it was simple and obvious, and not that it required inventive genius to conceive. It is not like the case where the art is waiting for the device, and inventors striving unsuccessfully to produce it.

"The pertinency of this observation to this case is obvious when we recall the fact that at the same time several men, who lived in widely scattered portions of the country, were in the Patent Office simultaneously claiming this alleged invention.

"These coincidences may be explained by the state of the prior art, which is well exhibited by the record in this case. So great a contrast in defenses exist between the record here, and that before the court at Philadelphia, that some ground is afforded for the suspicion that just enough was made in the latter court to present an adjudication on the apparent merits. . . ."

In *United States Column Co. v. Benham Column Co.*, 238 Fed. 200 (C. C. A., Second Circuit, November 14, 1916), the following pertinent statement is made:

"His opinion sets forth fully and clearly the state of the prior art and his conclusion is rested principally on the presumption of invention arising from the granting of the patents, together with public appreciation of the subject patented. . . . All the elements of the combinations were old and the combination was useful. . . . We are not able to discover invention in extending the cement filling of hollow columns, which was old, into the hollow caps inserted into the casing of the column or in connecting two columns by a rod projecting from the lower into the upper column.

"The decree is reversed."

In the case of *Mallon et. al. v. William C. Gregg et. al.*, cited above, the court says, p. 76:

". . . various combinations of these mechanical elements to adapt the endless rake to the removal of hay, grain, straw, ice, coal, lumber, and crushed cane, were old and well known before Mallon conceived his invention. What, then, was the novelty of his conception which proves that it was the product, not of mechanical skill, but of inventive genius? Counsel for appellants answer that it was the burst of thought that this endless-chain rake might be used to unload sugar-cane from cars, and the mechanical adaptation of the old devices in which it had served to this new use. Was there, however, an exercise of inventive genius in the conception that an endless chain rake which had been applied to the movement of the materials which have been specified could also be used to rake sugar-cane from a loaded car? The thought that a machine or combination which is discovered in a remote art, where it is used to perform another function, a machine or combination which was not designed by its maker, was never actually used, and was not apparently suitable, to accomplish the desideratum, may be adapted to perform the requisite function, may be, and frequently is, with proper

mechanical adaptation, the result of the exercise of the inventive faculty. But a thought which would naturally occur to any mechanic familiar with the object to be attained, and with an existing machine or combination discovered in the same art or in one nearly analogous to it, designed, suitable, and used to perform a similar function, that this machine or combination can be used or adapted to perform the function desired, is not the product of inventive genius, but the mere result of the application of the skill of the mechanic to the subject under consideration."

Page 78:

" . . . The term 'mechanical equivalent' has a broad and generous signification in the interpretation of a pioneer patent, a very narrow and restricted one in the construction of a patent for a slight improvement, and, in the interpretation of patents for the great mass of inventions between these extremes, its meaning is always proportioned to the character of the advance or invention under consideration. *National Hollow Brake-Beam Co. v. Interchangeable Brake-Beam Co.*, 106 Fed. 693, 711, 45 C. C. A., 544, 561."

Page 79:

" . . . Since at least one element of each of the combinations secured by the claims upon which this suit is founded is wanting in the machines of the defendants, they cannot be held to infringe these claims, and the decree of dismissal is not subject to reversal. The absence from a device that is alleged to infringe a patented combination of a single mechanical element of that combination is fatal to the claim of infringement. . . ."

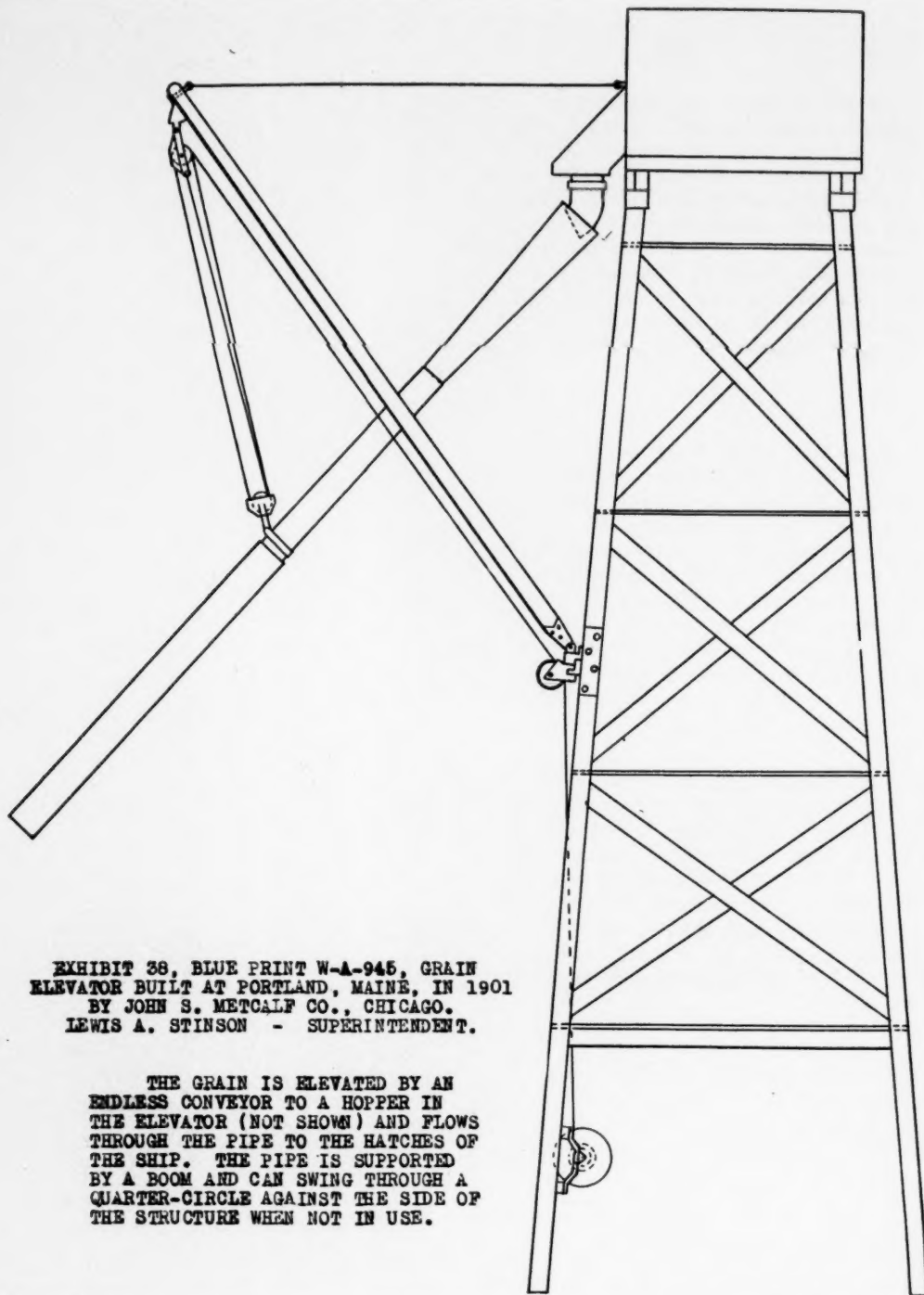


EXHIBIT 38, BLUE PRINT W-A-945, GRAIN
ELEVATOR BUILT AT PORTLAND, MAINE, IN 1901
BY JOHN S. METCALF CO., CHICAGO.
LEWIS A. STINSON - SUPERINTENDENT.

THE GRAIN IS ELEVATED BY AN
ENDLESS CONVEYOR TO A HOPPER IN
THE ELEVATOR (NOT SHOWN) AND FLOWS
THROUGH THE PIPE TO THE HATCHES OF
THE SHIP. THE PIPE IS SUPPORTED
BY A BOOM AND CAN SWING THROUGH A
QUARTER-CIRCLE AGAINST THE SIDE OF
THE STRUCTURE WHEN NOT IN USE.

The Claims in Suit Are Invalid (D); They Represent a Mere Double Use of Apparatus Previously Used For Many Years For Distributing Other Material.

The precise combination of five elements is found in the grain art, having been used for at least twenty years. The Portland, Me., elevator built in 1901 and the New Orleans elevator built in 1905, each comprise—

1. A tall elevator structure or tower.
2. A suitably supported horizontal movable boom connected therewith.
3. A conduit carried by the boom.
4. An endless conveyor for elevating the grain from the ground level to the hoppers near the top of the elevator corresponding to "means for raising plastic material to a suitable point in the height of the tower."
5. Hoppers for receiving the grain from the endless conveyors and conducting it to the conduit or pipe.

See Exhibit 38 inserted opposite page 638 of the record. The second print marked 39 (erroneously) is also part of Exhibit 38.

The use of these five elements and particularly the boom supported pipe for conducting the concrete from a higher point to a lower point and distributing it over the arc of a circle is obviously a mere double use of apparatus previously used for conducting grain to the different hatches of a ship, for a period of at least seven years before Callahan entered the field.

In addition to the Portland and New Orleans elevators in which the booms extended diagonally upward from their swivel support, or seat, we have the standard Bellinger spout used in a very large number of cases on grain elevators in various different cities. The boom used with the Bellinger spout is in horizontal po-

sition and is limited to a side swinging movement. However, the claims in suit imply a side swinging movement but do not specify a swinging of the outer end of the boom in a vertical plane, so that this apparatus corresponds completely with the elements of the claims.

It is true that claim 5 calls for a vertical adjustment of the hopper and of the boom, whereas, the grain elevator apparatus does not require this vertical adjustment. There is a relative vertical movement, however, due to the up-and-down movement of the boat, caused by tides, and also the settlement of the boat as it fills with grain. As elsewhere pointed out, this vertical adjustment, both of hopper and boom, was old in other uses, including the erection of concrete buildings. Claims 1, 2, and 13 do not include this vertical adjustment.

In the absence of proof to the contrary it may be argued that since the Bellinger spout and analogous grain spouts were available for years before Callahan entered the field, and since no one apparently used them just as they were, for the distribution of concrete, there must have been some inherent or subtle difficulty which Callahan overcame, and the overcoming of this difficulty in the adaptation of grain spouts to concrete therefore involved invention. (This assumption of course ignores the use of grain swivels and pipes for depositing concrete in the Webber Dam in 1906). It may also be argued that the mere fact that grain spouts were available for years before Callahan entered the field, and were not universally used for distributing concrete, is very persuasive that the change from the grain art to the concrete art was invention.

The answer to this argument, however, is self-evident in view of the record in the present case. *The reason that grain spouts were not used twenty years ago for distributing concrete was that the concrete of that period*

was too dry to flow through an inclined pipe. The fact that it would clog or choke the pipe was so obvious that it was useless to make the attempt. Comparatively dry concrete was demanded at that time, so that contractors were debarred from adding an objectionable surplus of water to make the concrete flow through pipes. The use of more water in concrete was a gradual evolution, being *opposed vigorously* by the majority fifteen or twenty years ago. During a period of five or ten years there was a gradual change of viewpoint as successful structures were erected with wetter concrete. As soon as concrete wet enough to flow through a pipe became acceptable to architects, builders and their inspectors, contractors in many different parts of the United States began to use pipes or chutes as a substitute for wheelbarrow distribution in cases where the substitution was economical.

It is our contention, therefore, and the records abundantly sustain our contention, that the use of pipes, or, preferably chutes, was a natural and inevitable development from dry concrete to wet and that neither the Concrete Appliances Company, nor any one else, is entitled to a broad monopoly on the most suitable apparatus available at the time for distributing the concrete.

Bellinger, the inventor of the Bellinger spout, and other pioneers in the grain elevator art, were entitled to all the uses to which their boom supported spouts might be put and after their early patents expired the public was entitled to use these spouts, not only for grain, but for any other material which would flow through them.

The Court of Appeals for the Third Circuit, on this question of "double use," said:

"it will be seen that the steps of lifting grain to get gravity; of storing to get quantity; of chuting to get delivery; and of boom swing and trough

shift to vary locality of delivery; and also of duplication of these shore appliances by supplemental boom and conduit on shipboard; had all been advanced to a high state of efficiency and delivery point variation in elevator grain practice."

Also:

"Later, when concrete docks, piers and the like came to be built, it was quite natural for contractors to use in building them the apparatus used for grain chuting and to handle and chute concrete in the same way. And such, the proofs show, was the case as will be seen by reference to but one or two operations."

The gradual discovery by a large number of engineers and contractors throughout the United States that additional water in the concrete would not seriously affect the strength of a building and would have many advantages in making the concrete flow around and adhere to the reinforcing bars, is a discovery to which the public as a whole is entitled. It would be a great injustice *to take from the public* the boom supported spouts which they have been entitled to use for years for any and every purpose and prohibit them at this late date from using them for distributing wet concrete. The alleged monopoly granted by the Patent Office to the Concrete Appliances Company is, therefore, entirely unjust and unwarranted, and deprives the public of something they have been using in the past and which they are entitled to continue to use in the future.

The theory of the patent law is that if an inventor devises some wholly new apparatus which the public *has never used before*, it is no hardship on the public to let the inventor have a monopoly on it for seventeen years in order that the public, at the end of the seventeen years, may have the use of something new which they never had before. It is a *direct perversion* of the patent laws to

take away from the public something they have been using for years and present it to some party who mistakenly thinks he is the first inventor of the apparatus in question, who has succeeded in erroneously persuading the Patent Office of his inventorship, and who by withholding the practical history of the art from the United States courts has succeeded in obtaining a decision from a Court of Appeals affirming his right to an unjust monopoly.

See *Dodge Coal Storage Co. v. New York Cent. & H. R. R. Co.*, 150 Fed. 738-740 (Circuit Court of Appeals, Second Circuit, Jan. 7, 1907), previously cited. The court says (p. 739):

"The patentees say:

" 'The object of our invention is to provide a comparatively cheap structure which will pile material in a *semi-circular or circular* pile from a fixed point, and remove material from the pile to a fixed point.'

"The would-be inventor or designer of novel mechanism for accomplishing these objects, therefore, is presumed to have before him the whole field of the art of engineering construction applicable to the collection and removal, the elevation and conveyance, of such materials from one point to another. And the question here presented is, not what these particular patentees may actually have invented, but whether the state of the art in such engineering field was such that it would require invention to construct such apparatus, or to adapt the constructions known in the art to the exigencies of a particular situation, or the requirements of a certain class of materials."

In *Warner Instrument Co. v. Stewart & Clark Mfg. Co.*, 185 Fed. 507 (Circuit Court of Appeals, Seventh Circuit, January 3, 1911), the court states (p. 511):

"Appellant claims that Cadman's idea was invention because it did not suggest itself for nearly three years to those skilled in the art. In *Warren Web-*

ster & Co. v. C. A. Dunham Co., 181 Fed. 836, where 11 years of experimentation had passed before the patent issued, Judge Sanborn, speaking for the Circuit Court of Appeals for the Eighth Circuit, in disposing of a similar contention said:

“These arguments are persuasive. They have been carefully considered. But the application of an old device or combination to a new use is not in itself an invention, or capable of protection by a patent. If the relation between the two uses is remote, and the old device or combination produced a new result by virtue of its new application, that application may constitute invention. Where a machine or a combination is discovered in a remote art, where it is used to perform a different function, and where it was not designed and was not apparently suitable to accomplish the thing desired, the application of it with proper mechanical adaptation to a new use is often the result of the exercise of the inventive faculty and may be protected by patent. But the thought that an existing machine or combination discovered in the same art or one nearly analogous to it, designed and suitable to perform a similar function, may be used or adopted to accomplish the desideratum, is not the product of inventive genius, but the result of the application of the skill of the mechanic to the subject under consideration. It is only when the new use is so recondite and remote from that to which the old device and combination has been applied, or for which it was conceived, that its application would not occur to the mind of the ordinary mechanic skilled in the art, seeking to devise means to perform the desired function, with the old machine or combination before him, that its conception may rise to the dignity of invention.”

“We are of the opinion that the Cadman device did not involve invention.”

Ransome Concrete Machinery Co. v. United Concrete Machinery Co., 177 Fed. 413 (Circuit Court of Appeals, Second Circuit, March 7, 1910):

“Patents (§ 27*)—Invention—Concrete Mixer.

“The Ransome patent, No. 814,803, for a concrete-

mixing machine, consisting of a batch-mixing drum, in view of the prior Burns patent, No. 661,847, for an apparatus for mixing tea 'and other material,' even conceding that the Burns patent applies only to mixers of dry non-solidifying materials, is void for lack of patentable invention, being a mere adaptation to a double use, requiring only mechanical skill."

.

On page 416 the following statement appears:

"The question, then, is whether its use for mixing wet and solidifying materials is for a new and non-analogous purpose. And this resolves itself into the inquiry whether, in case the Burns mixer were used for mixing concrete, it would operate in substantially the same manner to accomplish substantially the same result as when used upon dry material. We think that it would. Notwithstanding the difficulties involved in mixing concrete, we are satisfied that the Burns mixer would act upon the required materials in the same way as upon other materials. The apparatus shown in the Burns patent, with all its appendages, is undoubtedly better adapted to mix a light, dry material than concrete; but we have no doubt that it would mix and discharge the one in the same manner that it would mix and discharge the other, and with quite similar results.

"For these reasons we think the use of the Burns apparatus for the purpose of mixing concrete at the utmost only a double use, not involving invention. It is rather a case of changing the materials to be operated upon than of changing the method of operation. Indeed, it seems about as clear a case of double use as is shown in the well-known illustrations given by the Supreme Court in *Potts v. Creager*, 155 U. S. 597, 608, 15 Sup. Ct. 194, 198, 39 L. Ed. 275.

"If, for example, a person were to take a coffee mill and patent it as a mill for grinding spices, the double use would be too manifest for serious argument. So, too, this court has denied invention to one who applied the principles of the ice cream freezer to the preservation of fish. *Brown v. Piper*, 91 U. S. 37 (23 L. Ed. 200).

"See, also *Mast v. Stover*, 177 U. S. 485, 20 Sup. Ct. 708, 44 L. Ed. 856."

See also the analogous case, *Dunbar et. al. v. Eastern Elevating Co. et. al.* (Circuit Court of Appeals, Second Circuit, May 26, 1897, 81 Fed. 201-205, from which the following pertinent statements are taken:

(P. 203):

“Dunbar contemplated making his portable elevator a *high one* capable of emptying its contents into one of the stories of the many-storied grain elevators of Buffalo, but the patent is not limited to such an elevator. The descriptive parts, and some of the claims, though more directly addressed to such an elevator are applicable to one of any height or size. . . .

“It is manifest from what has been said of the prior state of the art that what Dunbar did was to adapt well-known devices to the special purpose to which he contemplated their application. The elevator, with all its equipment for reaching, raising, and transferring grain, was at hand. . . .”

(P. 204):

“We are unable to doubt that all these things were within the range of ordinary mechanical skill, and that they could have been suggested and constructed by any competent builder, and that what Dunbar did was merely to exercise the common skill of the calling The trough which he placed along the front of the warehouse was the receptacle most obviously convenient and in common use in the grain elevators for distributing the grain to different parts of a building. It certainly did not involve inventive skill to place it on the outside of the building, within reach of the spout of the portable elevator.

“We are not unmindful of the advantages which have resulted from the new organization of the elevator described in the patent, but we are unable to doubt that the improvements of Dunbar were but the work of an intelligent builder. When, in the evolution of grain elevator construction, their desirability became manifest, it did not require genius or inventive faculty to create them. . . .”

(P. 205):

"The circumstance that the same congregation of devices has never been assembled in a new location is not controlling, and is often of little value in determining the question of patentable novelty. Their assemblage may be nothing but another instance of a double use, and, when they require special adaptation to the new arrangement and occasion, it still remains to inquire whether this has required invention. . . .

"We conclude that the patent is void for want of novelty."

See, also, *Roberts v. Ryer*, 91 U. S. 150, 157, where the court says:

(P. 151):

"It is no new invention to use an old machine for a new purpose. The inventor of a machine is entitled to the benefit of all the uses to which it can be put, no matter whether he had conceived the idea of the use or not."

(E) The Callahan Apparatus Was Impractical and Inoperative Until Its Inherent Difficulties Were Overcome by Changes Made by Others.

The difficulties encountered in using the apparatus of the Concrete Appliances Company, whether that of Callahan or Emtman, were brought out by a number of defendants' witnesses.

H. D. Squires, of Chicago, testified (beginning on p. 413) that in 1906 he was treasurer of the William B. Hough Company, middle western agents for the Ransome Concrete Machinery Company. After describing the prevailing method of placing concrete at that time and identifying the Ransome 1906 catalogue, Exhibit 21, he stated that his company also represented Concrete Appliances Company, of Los Angeles, from November, 1910, until the Hough Company went out of business, in 1913.

The arrangement was that the Chicago company was to license others to use the gravity system on a royalty basis. The Hough Company furnished blue-prints and rented to the customer such material as the hoist, hopper, pipes, etc., the customer furnishing the wooden towers and wooden boom.

The first customers were Witherspoon-Englar Company, of Chicago, on a Texas job (the parties who were afterwards sued for infringement in 1916 by the Concrete Appliances Company and Insley), and A. Monstead & Company, of Milwaukee. Both customers had considerable difficulty with the apparatus, a man being sent from Chicago to Milwaukee and another from Los Angeles to Texas. On the latter job there was so much trouble that they refused to use the apparatus on the remainder of the job, and in fact all the material that was rented on the "first two jobs" had to be entirely scrapped (p. 419, Q. 29). The dates of the jobs were December, 1910, and January, 1911, respectively, at which time apparatus of the same general type had been in successful use in St. Louis for some time, as well as in the steel district south of Chicago, and elsewhere, and in other parts of the country.

As the result of these difficulties the Hough Company redesigned the apparatus, after which it operated more satisfactorily. Certain blue-prints and drawings, Exhibit 41, illustrate the apparatus as Concrete Appliances Company proposed to have it used, and Exhibit 42 shows the revised blue-prints. Open troughs were substituted for closed pipes, the swivel pans were made larger and steeper, the strapping on the boom was made more rigid, and other changes were made. While these changes may not seem very radical, they at least amounted to the difference between failure and success, and show that prior to the dates on these revised blue-prints—which bear

various dates in April and May, 1911—the Concrete Appliances Company had not developed its apparatus to a practical workable basis, despite their testimony to the contrary. The witness testified that at the time the agency arrangement was made, in October, 1910, Mr. Engstrum came on from Los Angeles, accompanied by Mr. Emtman, who was represented as the man responsible for the gravity system—see page 417, Qs. 20 and 21, and page 424, Qs. 56-65.

Another witness to the same effect was Fred Bruner, of Pittsburgh who testified in open court (R. 575) that he was the vice-president of the Pihl & Miller Company, of that city, and that in 1910 he was employed by the William B. Hough Company, of Chicago; that his first experience with the Concrete Appliances apparatus was with W. J. Newman Company, of Chicago, in the fall of 1910; that Theodore Emtman, of Los Angeles, was sent on to give the plant a final inspection; that after Mr. Emtman had O. K.'d it, it could not be operated successfully; and that Newman was practically forced by the architect to abandon this method and fill the caissons by the previous cart method. The witness reported Emtman as having claimed to be the one who developed the entire apparatus, and had anticipated getting patents, but had become involved with other people, with whom "it was necessary for him to get together," the patents being assigned to one party.

The next experience was at the Brooklyn Navy Yard, where the witness encountered further difficulties in April or May, 1911. The trouble was the sagging of the chutes, causing them to clog up, and the "entire slowness" of the process.

The apparatus was furnished on a royalty basis of 10 cents a cubic yard, and on the assumption that its use

would save money over prior methods. However, it developed that the cost was at least \$10 per yard, a very extravagant figure. As a result the apparatus was taken down and moved.

The sagging of the pipes is illustrated in Exhibit 43, some photographs found by Squires in the files, showing some of the earlier apparatus with the chute propped up to prevent clogging, as described by the witness Bruner in answer to Q. 44 (R. 580).

After the Navy Yard job the witness was with the Parrott Company, of San Francisco, agents for Concrete Appliances Company, and was familiar with the use of their apparatus in Spokane, Washington, in 1912, where it worked out better than it had before. He said this was—

“the only real job we did on the Pacific Coast. After several attempts to sign up other jobs, which I was not able to do, because all the contractors stated that the lay-out was nice, and it looked good, but they did not feel like paying anyone any royalty for using it. So, therefore, as a general rule, they went ahead and used the apparatus, and our company would get nothing out of it. I wrote to the main office of the Parrott Company and also to the Concrete Appliances Company about these alleged infringements, but never could get any action, so I resigned and came back east” (578 Q. 28).

After the witness came East “practically everybody that had a job where they thought this apparatus would apply were using it,” and without the payment of royalties. The witness described several instances in Pittsburgh in 1913.

The fact that apparatus of this general character is now used quite extensively should not be accepted as evidence of merit in the particular equipment devised by Callahan since the more simple and practical modern equipment represents the development of others. The

opinion of the Third Circuit Court of Appeals on the operativeness of Callahan's device is shown by the following:

"Comparison of Callahan's apparatus with the prior art shows that it really constituted no advance over that art, but on the contrary, rather a step backward. For example, he either had no knowledge of the use of the open trough or chute, or if he had he made no mention of it or suggestion of its possible use, confining his specification and limiting his claims to 'a conduit' of closed pipe. And the proof is that this closed conduit of his claims soon proved worthless on account of clogging and had to be supplanted by the open chute of the earlier art."

The inoperativeness of this early apparatus of the Concrete Appliances Company is also confirmed by the testimony of Ellis and Hill, elsewhere referred to.

The situation is parallel to that in *Trussed Concrete Steel Co. v. Goldberg et al.*, 222 Fed. 506-510 (C. C. A., Sixth Circuit, May 4, 1915):

"No light upon this question of invention is afforded by favorable public reception and use; for the conception of the patent in suit was impractical commercially, as the floor beam, unless made extensively strong, is too weak to sustain (without deflection) the weight of the concrete during construction and thus to dispense with the centering, and the Buente truss seems never to have been used. The patent was purchased by complainant but a few months before beginning this suit.

"In view of the prior art, the claim is, in our opinion, void, unless at least restricted to the form shown in the description of the specifications illustrated by the drawings of the patent. *Duff v. Sterling Pump Co.*, 107 U. S. 636, 639, 2 Sup. Ct., 487, 27 L. Ed., 517; *D'Arcy v. Staples* (C. C. A. 6), 161 Fed. 733, 738, 88 C. C. A. 606; *D'Arcy v. Murray*, 161 Fed. 352, 354, 88 C. C. A. 364. So limited, the defendant's device does not in our opinion infringe the Buente patent."

The foregoing testimony shows that the claims in suit are invalid on the ground that the structure was inoperative and did less to advance the art than others independently developed.

The Claims Are Not Infringed.

In view of the entirely new defenses in this case over and above those before the Court of Appeals in the Sixth Circuit, we have shown that this patent is not the broad pioneer patent which that tribunal was led to believe. The present record shows beyond question that the claims are invalid, or at the utmost very narrow and therefore limited to the precise construction shown. Furthermore, the apparatus alleged to infringe is different.

Even in the absence of any of the prior uses which we have set up, the concession of priority by Callahan to Smith would necessarily limit Callahan's claims to such detailed improvements as he may have made over and above Smith's apparatus.

Defendant's Philadelphia apparatus differs from the narrow interpretation necessarily to be given to the Callahan claims in suit. In the apparatus as used initially, the second type, there is *no boom*, but merely a trussed chute. Even with the third type of apparatus, involving an inclined prop or boom, the claims, if valid at all, must be so narrowly construed that they are not infringed by this apparatus.

Claim 1, for example, calls for "a horizontally movable boom." Callahan's boom, in addition to the usual swing through the arc of a circle, moves *back and forth* across the face of the tower from one corner to the other. To construe this claim as valid, it would necessarily have to be limited to such movement, and defendant's apparatus does not embody this feature. This

same limitation appears in claim 5; in addition, there is a limitation, "Adjustably connected with the tower," which would have to be construed to refer to the very specific arrangement shown in Fig. 3^a, in which the horizontal tracks are adjustably fixed at different points in the height of the tower (see line 39 of the patent).

In addition, claims 1, 2 and 13 call for a "conduit carried by the boom," and claim 5 calls for a "horizontally movable boom carrying the conduit." This limitation would have to be construed as covering the specific openwork lattice boom marked X in Fig. 1 of the patent drawings, inclosing the pipe L. In other words, the conduit is carried by the boom in the sense of being surrounded by it and completely supported by it *throughout its length*, whereas in defendants' apparatus the *trussed chute* is supported at *one end* beneath the hopper and at *the other end* in part by the boom and in part by a diagonal cable running to the top of the tower, there being no intermediate support.

Furthermore, defendants' apparatus does not include the inoperative "conduit" called for by the claims and discarded after several years unsuccessful experimentation by the Concrete Appliances Company in favor of chutes. Defendants used steel chutes, in this respect following the example of the Ferro-Concrete Construction Company on the Ingalls Building in Cincinnati nearly twenty years ago.

Plaintiffs allege in their brief that defendants in their type 2 apparatus have merely *combined* the chute and the boom into a single element, and cite a number of cases to the effect that a mere joinder of two elements into one integral part will not avoid infringement, *provided the integral part accomplishes the same result as the two parts and in substantially the same way.*

Each of the decisions cited contains this proviso as to

accomplishing the same purpose. None of these decisions applies to the present case, for the reason that defendants in omitting the boom have completely omitted its function.

The function of the boom will be clearly understood from a consideration of a number of the cuts in this brief. For example, the first cut, illustrating two types of the combination of the claims in suit; also the cut representing defendants' type 2 apparatus; and the cut of the Smith 1906 apparatus, Exhibit 20. In the last-named cut, where a downwardly inclined chute has its upper end supported by a tower and its lower end supported by a steeply inclined cable, the weight of the chute, obviously, tends to cause it to swing downwardly and assume a steeper slope, this movement being prevented by the inclined cable, which is under considerable *tension*. The tendency referred to results in pushing the upper end of the chute against the tower or its swivel support, the chute being under *compression*. This could be illustrated by a simple stress diagram, which is not thought to be necessary, however, as these forces are well understood by all engineers and are obvious. An open sheet metal chute, or, in fact, a sheet metal pipe or any elongated sheet metal object, will stand very great *tensile* stresses, but comparatively little *compression* stresses; that is to say, if a chute were hung vertically by its upper end, it would be possible to hang very heavy weights on the lower end without tearing it in two. However, if the same chute were placed upright on its lower end and heavy weights were placed on its upper end, the chute would crumple up and collapse.

When a sloping chute supported by an inclined cable, as in the cut, Exhibit 20, or the cut, "Defendants' Apparatus Type 2," is loaded with concrete, the added weight of the concrete greatly increases the compression on the

chute, tending to crumple it up, in addition to the fact that the weight of the concrete tends to make the chute bend or sag in the middle.

In order to resist this compressive stress the chute has to be made stronger than if it were mounted in some other manner. It can be made of heavier metal, or it can be stiffened by flanges, or it can be reinforced by a stiffening frame, including guy wires, as in the case of the Philadelphia apparatus.

The object of using a boom is to *relieve* a chute or pipe of these compressive forces. In the first cut in this brief, where the chutes are hung from booms, it will be seen that each chute or pipe is simply held at its two ends from above, and is therefore under no compression whatever. In fact, each is under slight tension. The booms, of course, are under very great compression, but they are heavy enough to resist it.

The purpose of the boom, therefore, is to relieve the inclined chute completely of compression stresses, and thereby obviate the necessity of making it unusually strong. From this it will be seen that where defendants have chosen to *omit the boom* and use a cable-supported chute with the resulting compression stresses on the chute, they have completely eliminated one of the elements of the claim. They have not substituted some other element, nor have they combined the chute with a boom, for the reason that they have *not relieved the chute of compression*; they have simply stiffened it to enable it to withstand this objectionable compression. Therefore, they have not merely combined two elements into one integral part which effects identically the same purpose, as the stiffened frame does not relieve the chute of any of its compression. They have entirely discarded the boom and its functions in this type 2 apparatus; and under no interpretation can they be said to have

a boom as an element separate and distinct from the chute, as was reluctantly admitted by Insley in open court (R. 126, X-Q. 71).

The court is of course very familiar with the long line of decisions to the effect that the omission of an element of the claim avoids infringement. We call attention to a few of these cases.

In *Eames v. Godfrey*, 68 U. S. 78-80, the court states:

“The law is well settled by repeated adjudications in this court and the Circuit Courts of the United States, that there is no infringement of a patent which claims mechanical powers in combination, unless all the parts have been substantially used. The use of a part less than the whole is no infringement.

“Eames has a right to use any of the parts in Godfrey’s combination, if he did not use the whole; and if he used all the parts but one, and for that substituted another mechanical structure, substantially different in its construction and operation but serving the same purpose, he was not guilty of an infringement.”

See, also, *Russell Grader Mfg. Co. v. F. B. Zeig Mfg. Co.* (259 F. R. 575-577, C. C. A., Sixth Circuit, June 3, 1919), from which the following pertinent quotations are taken:

“A self-contained frame and a scraper blade carried thereby are important and undisputed features of plaintiff’s patent. Each of the 13 claims contains them. Defendant’s machine, as shown by reference to the cut in our former opinion (249 Fed., at page 59, 161 C. C. A. 116), lacks this self-contained frame feature, unless, as plaintiff contends here, the equivalent of that frame is found in the curved, partly D-shaped front-piece (attached to the drawbar), in connection with the scraper blade attached to the rear end of the curved front piece; the scraper blade thus closing the figure D formation.”

"In view of the prior art, defendant's scraper blade is not the equivalent of the rear bar of that frame. The blade cannot be made to do duty at one and the same time as the element carried and as a part of the carrying element. Defendant thus lacks this distinctive element of the claims in suit—the carrying of the scraper blade by the frame of the patent."

"In an overcrowded art, where a broad generic invention is not possible, a defendant who omits altogether one element of a combination cannot be held as an infringer, even though he make another element do the double work. *Underwood Typewriter Co. v. Royal Typewriter Co.* (C. C. A., 2), 224 Fed. 477, 479, 140 C. C. A., 163, 164."

See, also, the following cases:

McCaskey Register Co. v. Mantz, 224 F. R. 495-496
(C. C. of A., Second Circuit, May 12, 1915).

"We concur with the Court of Appeals of the Third Circuit that the patent is in no sense a pioneer; that there can be no broad range of equivalents. . . . It makes no difference what combination of elements the specifications disclose, these two claims enumerate several separate elements of which one is a 'tab-holder' attached to the bill-clamp and another is an 'index-tab' mounted on the tab holder. To place an indexing letter or number directly on the clamp may be just as good, or better, or worse than putting it on a tab, which may be slipped in or out of a holder, but in the one case there are two elements, in the other only one.

"Since the claim calls for the two elements, it cannot be infringed by a device which employs one only, where there is nothing of a pioneer character in the patentee's device."

Wilson & Willard Mfg. Co. v. Union Tool Co. et al.,
249 F. R. 729-731 (C. C. of A., Ninth Circuit,
February 11, 1918, Rehearing denied May 13,
1918).

"If the defendant omits one or more of the ma-

terial elements which make up the combination, he no longer uses the combination, and it is no answer to say that the omitted elements are not essential, and that the combination operates as well without as with them. *Leeds & Catlin v. Victor Talking Machine Co.*, 213 U. S. 301, 29 Sup. Ct. 495, 53 L. Ed. 805; *Evans et. al. v. Hall Printing Press Co.*, 223 Fed. 539, 139 C. C. A. 129. It must also be established by one who alleges infringement of a combination that the entire combination, as a unitary structure and having substantially the same mode of operation, is present in the alleged infringing machine. *Owens v. Twin City Separator Co.*, 168 Fed. 259, 93 C. C. A. 561."

Petitioners, in their brief, under the heading, "The Effect of the Interferences," insist that the claims conceded by Callahan to Smith are "exceedingly narrow in that they are specifically limited to a construction in which there is a second chute section which is revolvably connected with the first chute section." We maintain that the second chute section is not a minor detail, but is an *essential part of the combination*. Without it, it is not possible to place concrete at any point within an area bounded by a circle with a radius equal to the combined effective lengths of the first and second chute sections. See R. 423, Q. 49, in which Squires explains this feature in Exhibit 41, Plaintiffs' Drawings of 1910. Bruner also, in open court, explained why this was an important feature (R. 580, Qs. 40-42). The testimony clearly shows and the drawings of the Smith, Callahan and Emtman patents show that regardless of how the first section is supported, it is *always necessary* to have *two sections* so that the second one may be swung around to reach any desired point. If only one section were employed, the concrete would be deposited in a *narrow path along the arc of a circle* and would have to be shoveled by hand or conveyed by carts to the rest of the area. The

Smith claims, therefore, are unquestionably very broad claims in that they cover the combination of the *fewest possible* number of elements which go to make up a successful concrete distributing system, i. e.:

1. "Means for elevating the concrete to a point above the plane of the work to be performed."
2. "A hopper adapted to receive the concrete so elevated."
3. "A primary distributing pipe revolubly mounted beneath the hopper."
4. "A secondary distributing pipe revolubly mounted beneath the mouth of the first named distributing pipe."

These four broad elements comprise claim 1 of the Smith patent conceded by Callahan. This claim, if valid, would be infringed by *any one* of the three or four different types of apparatus discussed throughout this suit, as follows:

An apparatus in which the first section of chute is supported by a *boom*.

An apparatus in which the first section of chute is supported by an *inclined cable*, permitting it to swing.

An apparatus in which the first chute section is supported by a *horse* which has to be moved about by hand.

An apparatus in which the first of any number of chute sections are supported from an inclined cable from the tower to a distant point, the so-called "catenary suspension" type.

In other words, the claim is *very broad* as to the particular means for supporting the first chute section. It is broad because it *omits* this unnecessary limitation. It is broad because none of these types could be used without infringing such a claim, since all of them, no *matter how the first chute section is supported*, embody a second chute section, which can be swung or revolved below the lower end of the first chute section.

The Callahan claim, on the other hand, involves *five* elements, one of them being a boom, which is a *specific way* of supporting the first chute section. The claim as a whole is therefore limited, as any apparatus which omitted the boom would not infringe. It is true that the claim also omits the second swivel chute section, but whether it omits it or not, such second section must necessarily be used in order to reach the entire area.

It is obvious that, other things being equal, a claim with four elements is broader than one with five elements.

The Smith claims are made up exclusively of *essential elements* no one of which can be omitted from a completely operative combination. The Callahan claims are *not* made up exclusively of essential elements but include in each case a boom, for which we frequently find contractors substituting cables or horses.

We submit that this is conclusive as to which claims are broadest. In addition, we call attention to page 5 of the appellant's brief before the Sixth Circuit Court of Appeals, in which the present plaintiffs' same attorney stated "Callahan conceded priority to Smith as to certain of the broadest claims."

See the case of *McCaskey Register Co. v. Divens* (Circuit Court of Appeals, Third Circuit, March 28, 1912), 194 Fed. 967-969, where the court says:

"From what has been said, it is obvious that the patent is a very narrow one, and that, if it is sustained, it must be narrowly construed and practically confined to its exact disclosures. . . .

" . . . The claim is broad enough to cover any kind of a yoke, but so many kinds appear in the prior art or in general use that almost any kind was open to adoption. McCaskey chose one form and must abide by his selection. The defendant's device shows a yoke which in structure and location is so different from the complainant's that, under

the circumstances, it cannot be held to infringe it. . . ."

We do not fully understand the conclusions reached in the decision of the Sixth Circuit Court of Appeals, relating to infringement. We understand it to mean in substance that since Callahan filed before Smith and since there is nothing in that record to show that Smith made the invention before Callahan's filing date, Smith could not claim to be the inventor of anything disclosed by Callahan and therefore is limited to such features as he, Smith, discloses over and above what is disclosed by Callahan. The decision then concludes that Smith has a second conduit revolving beneath the mouth of the first conduit section, whereas Callahan has not. However, this seems to be a mistaken conclusion, as Callahan clearly shows the second distributing pipe revolvably mounted beneath the mouth of the first distributing pipe in Fig. 1 of his patent. It is marked B³ and the lower half is broken away, otherwise it would be somewhat longer. It is also described on page 3 of the patent in lines 5 to 10, inclusive. It is also shown in the photograph of the Timken Building on which this apparatus was first used (Exhibit 59, third from the last page), the photograph showing the concrete flowing from the lower end of this swivel pipe held in the hands of one of the workmen.

The record in the present case is decidedly different and *not* the same as the one in Cincinnati, as our opponents allege, in that we have taken proofs showing that Smith made his invention not only earlier than Callahan's filing date, but earlier than Callahan's invention. Following the reasoning of the said court, we contend that Smith, having been shown to be prior to Callahan, the latter at the most is entitled only to such detailed features as are over and above those disclosed by Smith.

Callahan's claims, would, therefore, have to be very narrowly construed, even in the absence of any other prior developments. Smith used an inclined cable for supporting his first chute section on the Lynnhaven Hotel job, and used an actual boom, shown and described as such in his patent, on the Coliseum job in August, 1908. Plaintiffs admit that the inclined cable is the *equivalent* of a boom in the hope of having their claims interpreted broadly enough to prevent contractors from using even such a simple and well known support. If the Coliseum apparatus had never been erected, Callahan would, at the best, be limited to an ordinary boom as distinguished from the earlier inclined cable of Smith. Since Smith did use a boom on the Coliseum job, however, earlier than Callahan's Timken Building apparatus from which his patent drawing is copied, Callahan under the most favorable interpretation would be limited to practically the very peculiar boom shown in his patent, *i. e.*, a latticed boom supporting the pipe throughout its length and mounted on a little horizontal track at its upper end to enable it to be moved back and forth several feet from one corner of the tower to the other.

In view of the overwhelming extent of the prior art brought out in defendants' record, Callahan is clearly not entitled to have the particular claims in suit narrowed down and given a forced interpretation for the purpose of saving them, when they are obviously invalid, since Callahan has numerous other claims in his patent covering these particular details of a track supported boom, etc. If Callahan is the first inventor of these details, he is protected in his real invention by *these other claims*, but he is not entitled to cover broadly features developed by others prior to the construction of his first apparatus, particularly where Callahan's apparatus apparently proved to be too complicated to suit the Eng-

strum Company and Concrete Appliances Company, as they afterwards departed from it and from the structure of Emtman's patent (as clearly shown in their catalogue Defendants' Exhibit 59, and after several years of development work, adopted and sold through their licensees practically the apparatus of the Great Lakes Dredge & Dock Company, developed at an earlier date.

In this connection we also call attention to the fact that Smith's failure to claim the boom in his patent does not detract from the fact that the boom, as actually used was an anticipation of Callahan. Smith testified that the omission of the boom from the claims was an oversight on the part of his attorney, but in view of the attorney's well known reputation as an authority on patent law, we conclude that the boom was not included in the original claims, as it was such a commonplace feature that the attorney, instead, drew very broad claims with this detail omitted, until such time as the citation of prior patents by the Patent Office would compel the inclusion of this element and other less important features. It so happened that the Patent Office allowed the claims almost immediately, an unusual procedure, and the interference having arisen shortly thereafter and having been settled, there was no opportunity for Smith's attorney to add further detailed claims, including the boom, and Smith's trip to the Philippines at this time necessitated terminating the interference without consulting him.

As to the effect of interferences see:

Elliott & Co. v. Youngstown Car Mfg. Co. (C. C. A., Third Circuit, Aug. 30, 1910), 181 Fed. 345-349, where the court says:

"Nor is the ordinary presumption to be indulged in favor of the patent, because of the action of the Patent Office in allowing it; the Urie, Schwarz and Suter

patents, as it appears, not having been referred to, as they have been here.

“The same also is to be said of the alleged recognition which has been given to the invention by the public, the complainant, as it seems, under the advice of counsel having bought up the patent rather than contested it, and other parties having either taken out licenses, or discontinued infringement upon failure to negotiate for them upon satisfactory terms. These are matters which are no doubt entitled to consideration under ordinary circumstances, but they are of no significance against the showing here. Nor is it necessary to dwell upon the suggestion that applications were made for blue-print machines with an automatic cut-off by four different inventors about the same time, Fullman and Herman among the rest. The fact that so many persons caught the idea goes rather to prove that it was simple and obvious, and not that it required inventive genius to conceive. It is not like the case where the art is waiting for the device, and inventors striving unsuccessfully to produce it, under which circumstances invention may well be held to appear.”

Also *Eck v. Kutz* (Circuit Court, E. D. Pennsylvania, Sept. 23, 1904), 132 Fed. 758, where it is stated on p. 772:

“But the defendant is met at the outstart by the fact that Burleigh on May 24, 1895, a week after Eck made application for a patent embodying his ideas, and upon an interference being declared between them, into which a third party named Rowe, who was also in the Patent Office with a similar device, was drawn, the proceedings ended in a disclaimer by both Burleigh and Rowe, and the granting to the complainant of the patent in suit. This result does not, it is true, conclude the defendant. He may still show, if he can, that the facts were otherwise; that Burleigh, notwithstanding his declaration to the contrary, was the real inventor; and that the complainant in consequence had no right to that pretense. But he is necessarily at a serious disadvantage in seeking to do so, because he has to maintain that he is better advised in the matter than Burleigh himself

was in entering his disclaimer, and that, notwithstanding the presumption that it was done with full knowledge, it was nothing less than a mistake on his part to make the concession."

Phoenix Knitting Works et al. v. Rich et al., 194 Fed. 722-723 (Circuit Court, N. D. Ohio, E. D., November 27, 1911):

"... During the progress of the interference, Meyers became in default, and Rosenfeld and Tyrrell (the former abandoning his attorneys and accepting the latter's counsel) yielded to Mead; Rosenfeld conceding priority to Mead and Tyrrell abandoning the subject-matter of the issue.

"At first Rosenfeld was represented by counsel in Detroit. His concession, however, was executed in Milwaukee, the home of the Phoenix Knitting Works, in the presence of counsel for Tyrrell and for Mead. Tyrrell was an officer of the Bradley Knitting Company, and upon the allowance of the patent to Mead under these circumstances, the Bradley Knitting Company became joint owner with the Phoenix Knitting Works, of which corporation Mead was vice-president.

"The facts give the court very little reason to over-indulge the presumption that allowance by the Patent Office is a *prima facie* establishment of the novelty of the invention and identity of the inventor. They are too redolent of an amicable adjustment, if not of a juggling, and all the more suggestive in view of the fierce competition in the knitting art over the subject-matter. . . ."

Edward Barr Co. v. New York & New Haven Automatic Sprinkler Co. (Circuit Court, S. D. New York, August 18, 1887), 32 Fed. 79-80:

"A presumption of validity arising from a successful interference in the patent-office only applies against the parties to the interference and their privies. It does not extend to litigants who do not make the infringing article under a grant from the interferer."

Western Electric Co. v. Williams-Abbott Electric Co. et al. (Circuit Court, N. D. Ohio, E. D., December 2, 1897), 83 Fed. 842:

"The same rule applies to averments of interference proceedings, for they raise a presumption of the validity of the patent only as against the parties thereto and their privies."

See, also, *McCaslin v. Link Belt Machinery Co. et al.*, 139 Fed. 393, where on p. 395, the court says:

"The interference proceedings, for reasons sufficient to the Court of Appeals for the District of Columbia, terminated in complainant's favor; and his application was found to anticipate Hunt's date of filing, which was September 10, 1892. That decree is not binding upon the defendants, they not having been parties or privies to the proceeding nor claiming under the patent issued to Hunt." Citing cases.

No Public Acquiescence.

Widespread and continued acquiescence by the public is of great assistance to a plaintiff in helping to establish the validity of a patent where the case is otherwise in doubt. The present case is one in which there has been about as little public acquiescence as can possibly be imagined. The numerous suits which the plaintiffs have started (but have not finished) confirm this statement. In addition, we have the testimony of Bruner to the effect that the patent was so generally disregarded on the Pacific Coast that he severed his connection with the plaintiffs' agent, and on returning to the East, about 1913, found the patent quite generally disregarded by any one who wished to use the apparatus. Mr. Hill confirmed this situation on the Coast.

The fact that one of the petitioners, Concrete Appliances Co., has licensed two other companies, in addition

to licensing Mr. Insley, does not establish public acquiescence, but rather suggests the advantage to the licensees of working under broad claims of this patent and the very broad claims of the Smith patent before they were held invalid in the Cincinnati suit. The expense and inconvenience of defending a suit confronts a user or a rival manufacturer immediately upon an inspection of the Callahan records in the Patent Office, wherein it is shown that the development work relied on by petitioners was carried on in California, necessitating making investigations and taking testimony on the extreme western coast, far remote from the larger manufacturing centers of the region east of the Mississippi. In this connection we call attention to *Thropp's Sons' Co. v. Seiberling*, 264 U. S. 329; 68 L. Ed. 712 (1924):

"We are pressed with the argument that many tires, reaching into the millions, have been made under a license granted by Seiberling, and that the success of the device shows the utility and novelty of what he licensed. . . . Both patents made large and sweeping claims which were well calculated to induce acquiescence by those without sufficient knowledge of the prior art, or adequate capital to resist."

The advantage to the two companies referred to, in having licenses under a patent which has been held to be a pioneer patent, is obvious, as three or four companies can attempt to divide between them all the business in the United States at a very great profit to themselves, considering the price of \$3,500, which Insley testified he charged for a complete equipment. (R. 119, Q. 10.) About one hundred and fifty such equipments were sold in the vicinity of New York alone within two or three years immediately preceding the trial (R. 119, Q. 9), making a total in excess of half a million dollars.

The Decision of the Court of Appeals for the Third Circuit Should Be Followed, Rather Than That of the Sixth Circuit.

The entirely new defenses, both publications and prior uses comprising the record in the Third Circuit and the fact that a different form of apparatus was used in the two cases, justify this court in adopting the reasoning of the Third Circuit Court of Appeals, rather than that of the Sixth Circuit.

The parties to the present suit filed, as a joint exhibit, a printed copy of the record and briefs in the Cincinnati case, on page 149 of which record is a photograph of the apparatus used by the Cincinnati defendant. Said photograph shows a crane boom or steel skeleton frame hinged to the tower. The conduit is "carried by" the boom in the exact sense that it is supported thereby throughout its length and hence differs fundamentally from the apparatus used by the Philadelphia defendant, as previously explained herein.

With reference to the question of invention, the inventive act is not a fixed and definite thing. What may be invention under one set of circumstances is not invention under another. For example, if a party is the first to use a combination of five elements where no two of them have ever been combined in the same way before, such combination might be invention, as distinguished from mechanical skill. However, if they have all been used before in various groups for somewhat analogous purposes, there may be no invention whatever in first using all five in a particular combination not used before. In the present case, the history of the art has been gone into so fully, as compared to the Cincinnati case, in which the defendant made practically no showing as to the practi-

cal art, that we maintain that an entirely new question is presented on the question of invention as well as on the question of priority of use.

Plaintiffs, in an earlier brief, said that the

"Court of Appeals of the Sixth Circuit was thoroughly advised of the fact that it had been long common to hoist mush concrete in a tower hoist apparatus to a vertically adjustable hopper situated at successive floor levels, and to chute concrete from a hopper through a series of chutes."

We do not know how the said court could be thoroughly advised as neither side enlightened the court. The record before the Court of Appeals in that case may be searched in vain for any such testimony and plaintiffs' counsel in that case, who is also plaintiffs' counsel in the present case, said on page 4 of his brief before the said Sixth Circuit Court of Appeals:

"The record shows that the patents in suit are absolutely pioneer in the art. Prior to these patents, no device for the efficient delivery of fresh concrete mixture from the ground level to any desired point in an extended area at a higher level had ever been produced or even suggested."

In view of such statements and of the inability of the defendant in that case to make any substantial showing as to the prior practical art, it is easy to understand why the court was led to render such a sweeping decision holding that Callahan was a pioneer.

In the same brief the present plaintiffs urged that about "90 per cent. of large construction work is now being performed with apparatus of this kind." Although this was the testimony of Insley, it is a gross exaggeration in that it compels the inference that the apparatus referred to involves a boom. The facts are, as brought out in the present case, that a very large proportion of large concrete construction work is now performed with

the aid of tower and chute apparatus, but the chutes are supported in any one of three or four different ways, only a *small percentage* being supported by booms and a very large percentage comprising chutes suspended from cables.

The Plaintiffs Are Not Entitled to Equitable Relief.

Plaintiffs have not come into equity with clean hands. They have attempted to delay and harass the owners of a building in Philadelphia which was being erected in the summer of 1920, at a time when the building shortage was very serious indeed, the building representing an expenditure of over a million dollars. They asked for a preliminary injunction based on a sweeping decision of another Court of Appeals which they knew from the outset was founded on a complete misunderstanding of the history of the art.

The testimony of defendants' St. Louis witnesses shows, and Insley, one of the plaintiffs, admitted in open court that he was familiar with these very important St. Louis defenses, such as the American Theater Building and Coliseum Building, several years prior to the beginning of the Cincinnati suit.

The testimony follows (R. 123-124):

"By the Court:

"X-Q. 46. The question is substantially this: You were a party to the Cincinnati litigation?

"X-Q. 47. And was not that litigation conducted without a disclosure by you of the prior uses which had been made a feature of the Vancouver litigation?

"Mr. Hood: Your Honor, he was the plaintiff in that case. That was not up to him. He was the plaintiff in the Cincinnati case.

"The Court: It is not a question of whether it was

up to him or not. The question is, did he or did he not make a disclosure of it?

"The Witness: No, not to my knowledge.

"By Mr. Jones:

"X-Q. 51. However, you have advertised rather widely the Cincinnati decision, have you not?

"A. We probably have, yes.

"X-Q. 52. And until we filed our interrogatory in this case asking whether the chutes hung from from an inclined cable, as distinguished from a boom, were an infringement, you were quite willing to have the public believe that even this type was an infringement, were you not?

"Mr. Hood: It seems to me we are encumbering the record with an expression of opinion. It does not make a particle of difference what this witness may have thought his patent covered, or what he may have claimed it covered.

"The Court: That will not do. This is a proceeding in equity, in which he is asking for the extension of the grace of the Chancellor (fol. 220). This line of interrogation is based upon the clean hand doctrine of the Courts of Chancery.

"Mr. Hood: I have no serious objection to it at all. It is all right, if the Court wants to have the information, but it does seem to me that there is more padding of the record than there is any necessity for.

"The Court: I will not restrain counsel. He may develop all the circumstances he thinks proper.

"Mr. Jones: I will try to make it as brief as possible, but there is quite a direct connection, I think, between the two cases.

"By Mr. Jones:

"X-Q. 53. Do you understand the question?

"A. Read the question again.

"(Question No. 52 repeated.)

"A. May I answer that by an explanation, your Honor?

"By the Court:

"X-Q. 54. You had better answer the question, then explain. That is the usual way.

"A. Yes.

"X-Q. 55. You either did or you did not. Answer the question, yes or no; then explain.

"A. My answer is 'Yes' and my explanation is that up to the time of the Cincinnati suit we did have patents which covered substantially the distribution of concrete by gravity through chutes, by any character of chutes, and after the Cincinnati decision the question never came up definitely for a decision as between us and any possible competitor until you brought the question up in relation to this case."

The other plaintiff, Concrete Appliances Company, knew of these defenses also, as it was the plaintiff in the Canadian suit, during the course of which the St. Louis defenses were developed by Insley.

Nevertheless, the plaintiffs have been well satisfied to take advantage of the unfamiliarity of the Cincinnati defendant with these prior uses and, by their silence, misled the Circuit Court of Appeals for the Sixth Circuit, resulting in a decision in which said court stated:

"On the other hand, it impresses us as a bold and original thought that this material could be handled in this way. Distributing mush concrete through gravity chutes by one apparatus throughout the whole course of building obviously involved difficulties; it had never been handled by gravity chutes at all, excepting under simple conditions where these difficulties did not exist, and then, perhaps, had been done only on paper."

A decision of this character, when read by numerous parties familiar with the article in the Engineering News of July 30, 1903, illustrated by a photograph of the chutes used in building the Ingalls Building in Cincinnati in 1902-1903, for example, or familiar with the erection of the American Theater Building in St. Louis in 1907, would naturally tend to discredit the patent system in their minds, in the absence of some explanation why the court was not fully informed on such well known prior

developments. On the other hand, the reading of this decision by a large number of engineers and contractors elsewhere, perhaps not familiar with developments in Cincinnati and St. Louis, would give them the impression that plaintiffs were pioneers, as a result of which plaintiffs could use this decision as a very effective club in continuing to demand and receive excessively high prices for their apparatus, thereby adding to the already excessively high cost of building operations at a time when the lack of suitable building of every character and description was a national problem.

OTHER DECISIONS OF INTEREST.

The United States Supreme Court in *New York Scaffolding Co. v. Liebel-Binney Construction Co.*, 254 U. S. 24, said, with reference to a point also in controversy in this case, *i. e.* vertical adjustment of a construction appliance:

" . . . However, we may concede to counsel, for the sake of the argument, all of the uses and excellences of the patent, even though not discerned by Henderson; but his pretensions, whether at first hand or second,—his or those of his counsel,—must be subjected to the test and estimate of the prior art; and, so subjecting them, **we can discern no exercise of invention.** The changes were simply mechanical, easy to discern, and as easy to make; incidental entirely to the main idea of Murray, which was, as was declared by him, to provide a scaffold that would '*permit of adjustment at any height during the construction of a building or the repairing thereof*,'—a scaffold which might 'be readily moved from one position to another by the workmen thereon without interfering materially with the work being performed;' and one 'in which different supports are employed,' and 'in which the shifting from one set of supports to another set' might 'be accomplished without interfering in any degree with

the workmen thereon, or their work.' '' (Emphasis ours.)

See also:

Thomson-Houston Electric Co. v. Lorain Steel Co.,
117 Fed. 249 (Circuit Court of Appeals, Second
Circuit, May 29, 1902).

Also the following cases, where the patents before the courts related to subject-matter analogous to that of the plaintiffs' patent here, are particularly pertinent:

*Dodge Coal Storage Co. v. New York Central &
H. R. R. Co.*, 150 Fed. 738, C. C. A., 2nd Cir-
cuit.

United States Column Co. v. Benham Column Co.,
225 Fed. 55 (District Court, E. D., New York,
June 19, 1915).

Costs.

Our opponents in their brief allege improper taxation of costs by the lower court. They object to the very common practice of the defense of a suit being assumed by the manufacturer of the apparatus used, in this case the Sackett Screen and Chute Company and the Archer Iron Works, both of Chicago. The cases cited in support of their contention, however, are not in point as they relate chiefly to questions whether certain items of cost were actually incurred and also whether such items were in fact proper taxable items. In the present case no question as to the propriety of the items is raised by petitioners, with the exception of one amounting to \$210.43, but merely the issue that said items, totaling \$1951.66 (exclusive of the \$210.43 item), were not incurred by the nominal defendants, individually, as distinguished from the real defendants, the manufacturers. On the other

hand, respondents contend that the court erred in reducing respondents' bill of costs by deducting \$210.43, the amount constituting the premium on the bond of the American Surety Company in connection with the preliminary injunction proceedings. The complete items of costs are to be found on pages 653-656 of the record. The exceptions and Judge Dickinson's opinion are on pages 657-658. A stipulation as to the defense of the suit by the manufactures is found on pages 659-660, and the ruling of the Court of Appeals is on page 941.

In cases where the defense of a suit is assumed by the manufacturer of the apparatus in question, the manufacturer is the real defendant and not only may properly assume the defense but should do so in defense of his customers and this practice is so universal as to require no comment.

Petitioners' motion for a preliminary injunction was no less than an imposition, being based, as it was, on a sweeping decision of the Sixth Circuit Court of Appeals, founded on an incomplete presentation of the facts. Defendants (respondents) prepared for the hearing at great expense, and were ready with affidavits covering the important Norfolk, Cincinnati and St. Louis defenses, found in the present record.

When it developed during plaintiffs' argument at the hearing that the preliminary injunction would affect a large building under construction, the court "anticipating and hoping to escape discussion of the questions which it was foreseen would be raised" (R. 658) made the suggestion to plaintiffs brought out on page 658, and defendants had no opportunity to present their defenses, which, as subsequent events proved, would have disposed of any question of an injunction, temporary or final. While the court did not, in so many words, refuse a further hearing on the merits, the furnishing of a bond

was so strongly urged by the court as to amount substantially to a requirement and defendants were practically compelled to acquiesce. Certainly, if the bond had been offered voluntarily by defendants they would not have made all the elaborate preparations for the hearing on the preliminary injunction motion, nor incurred the great expense necessarily involved, where the time initially set was so short. For this reason, the amount of the bond premium, \$210.43, included in the sworn statement in the record, on page 656, is believed to be a proper item of costs and is in line with the new ruling of this court in 1924 in:

Newton v. Consolidated Gas Co., 265 U. S. 85; 68 L. Ed. 911:

"In *The Texas* (C. C. A., 3rd Circuit) 226 Fed. 897, 905, the Circuit Court of Appeals of the Third Circuit, after expressing its approval of the view that a rule of court or a practice equivalent thereto is necessary to justify the taxation of such costs, said:

" 'But we may also say that we think such a rule or practice has become so desirable that we feel confident the court below will take an early opportunity to conform its procedure in this respect to the custom prevailing in other districts.' "

and page 86

"and where a party litigant has, because of the claim of the opposing party, been compelled to furnish such security, and it turns out that it was wrongly required, a rule of court or usage which imposes the expense of the security on the defeated party is not unreasonable."

The Court of Appeals, in its order modifying the decree, awarded costs to the appellees (respondents) "covering their proper disbursements as users and the proper disbursements of the manufacturers supplying them with the alleged infringing appliances." (R. 941.)

We respectfully submit, therefore, that costs be awarded respondents and the manufacturers, amounting to \$2162.09, (\$1951.66, plus \$210.43), in addition to such costs as may be allowed in this court, if the decision of the Third Circuit Court of Appeals is affirmed, as to the main issues, as we believe it should be.

Conclusion.

The Coliseum apparatus of August, 1908, is a complete anticipation of claims 1, 2 and 13 of the Callahan patent in suit and is a substantial anticipation of claim 5, the only remaining claim. This latter claim reads, element for element, on the Coliseum apparatus and calls for a vertical adjustment of the hopper, as practiced in the Coliseum apparatus, and also of the boom, this latter adjustment being unnecessary in that particular apparatus.

Both of these so-called "adjustments" had been used for years prior to the Coliseum job, and Callahan displayed no inventive genius whatever in removing some bolts, hoisting the seat of the boom to a higher position with a block and tackle, and then bolting it in its new position, at successively higher points, as the building became higher; regardless of whether such successive elevation had ever been necessitated before.

This Colisum use is proved beyond a reasonable doubt, and is not denied by plaintiffs. The burden of proof is therefore shifted to the plaintiffs. The only earlier instance which plaintiffs have attempted to establish to carry back their date of invention is the crude pipe distributing arrangement on the Majestic Theater Building in the first few months of 1908. This apparatus was erected at the suggestion of Emtman and involved no boom other than, possibly, a simple prop or stick, and

even as to this there is very serious doubt. Certainly plaintiffs have failed to prove the use of a boom on this building by even a fair preponderance of the evidence and to the same extent they have failed to prove that any of the apparatus used was the invention of Callahan.

Petitioners do not point out wherein they have overcome the burden of proof, but direct their argument more particularly to the more gradual developments of the Great Lakes Dredge & Docks Company.

Near the close of their brief (top of page 78) they summarize their argument in the following question:

“Was it invention for Callahan to use the Great Lakes boom, support chute and hopper on a tower and make it vertically adjustably and freely swing thereon?”

The answer to this question is emphatically in the negative.

Callahan was not a pioneer in this field, but made only a small advance in the art, if any, and that advance is covered by the other claims of his patent, which are not in suit. If Callahan devised the apparatus of his patent, as appears to be probable, he is, of course, entitled to protection on those details of construction and he is welcome to said apparatus, as no one else seems to care to use it, not even his own assignee, the Concrete Appliances Co. Callahan's assignee is not entitled to monopolize the broader combination of the claims in suit merely because the Patent Office officials had no knowledge of the practical developments of the art which had taken place at an earlier date, and which had not been patented for the reason, apparently, that none of the contractors who developed them seemed to consider that there was anything patentable in them.

We submit that there has been about as little public ac-

quiescence as can well be imagined, particularly during the early years of this patent and before it became more convenient for contractors to buy this equipment from some licensee concern manufacturing it than to make it themselves. The fact that plaintiffs' licensees may have done considerable business in this particular line in the last few years is not at all persuasive, in this connection, in view of the almost universal lack of prior acquiescence.

It was not until 1911 or 1912 that the Concrete Appliances Company, with the aid of the William B. Hough Company and others, had perfected their apparatus to the point where other contractors, renting it from them, were able to use it successfully and economically, and by that time similar apparatus had been developed independently by others and used extensively in many different parts of the country.

The combination of the Callahan claims in suit involves no invention in any case, but represents a gradual and almost inevitable natural development in the art, which no one should be permitted to monopolize.

The claims are also invalid as they are for mere aggregations, each of the five elements performing its function, one after the other, in a series of steps. Each performed in the same manner that that part had always performed its function before and unaffected by any alleged cooperation of other parts. The boom had *no new* or in fact *any effect* on the concrete flowing through the conduit; the conduit had no effect on the capacity of the hopper to hold the concrete dumped into it and the hopper in *no way effected* the operation of the hoist bucket in its up and down movement. The tower was the same tower doing nothing new. All these five elements operated *exactly* as they had always operated before, either

separately or as used with one, two or more of the other five elements. The elevation of the hopper from time to time in the tower and the raising of the boom to a higher point on the tower did not affect the action of the other parts and each was old, in itself. The various advantages ascribed to petitioners' combination are the *inherent* advantages of such elements when *used in succession*; therefore there is no true *patentable combination* but a *mere* aggregation, and the claims in suit are invalid for this reason also.

The petitioners are not entitled to equitable relief, as their conduct has hardly been of a kind to impress a court of equity. On the contrary, it is the public that is entitled to equitable relief from this alleged monopoly which petitioners have been making the most of for more than fifteen years.

To sustain the claims of the Callahan patent would not aid in promoting the progress of science and the useful arts as contemplated by the Constitution, but would hinder progress and work an injustice on the public, and more particularly on contractors, engineers, and those who invest in buildings.

To sustain these claims would prevent all of these various construction companies whose developments were both concurrent with and earlier than those of the Concrete Appliances Company, from continuing to use the apparatus which they developed independently of each other and independently of any one connected with the plaintiffs. The Wimmer Construction Company, of St. Louis, and all other contractors might be prevented from using their 1908 apparatus on other Coliseum buildings or other structures, even though the Sixth Circuit Court of Appeals has held invalid the Smith patent, which shows this identical apparatus. The Great Lakes

Dredge & Dock Company, of Chicago and New York, might be prevented from continuing to use the apparatus which they began to develop in the spring of 1907. The Ferro-Concrete Construction Co., of Cincinnati, might be prevented from hanging from a boom on a tower, the steel chutes which they have been using in conjunction with a tower, hoist bucket and hopper off and on since 1902. The Brownell Improvement Company, of Chicago, might be prevented from using the apparatus developed by their Mr. Bannister at the time when the railroads changed their specifications from dry to wet concrete. The Selden-Breck Company, the Gilsonite Company, the Gerhard Construction Company, the Pelligreen Construction Company, the James Stewart Company, and other St. Louis companies, might be prevented from using the apparatus developed in St. Louis and St. Joseph, Missouri, in 1907 and 1908, in connection with a boom if conditions happened to justify a boom, and many other contractors and engineers would also be handicapped in using equipment which has been available to them for use since the days of dry concrete. Furthermore, engineers and builders of concrete grain elevators, like Stinson, Sinks and Folwell, would be prevented from permitting wet concrete to slide through the identical boom supported pipes through which they and many others have been distributing grain for at least fifteen or twenty years.

In fact, to sustain these claims would be to take from the public that which it has been using for many years prior to the belated successful development of petitioners' apparatus and that which it is entitled to continue to use indefinitely. The purpose of the patent law is not to deprive the public of something it is entitled to, but to give the public the benefit of something it has not had before.

In view of all of these circumstances we submit that the claims in suit are invalid and the decision of the Court of Appeals for the Third Circuit should be affirmed with costs.

Respectfully submitted,

GEORGE BAYARD JONES,
Counsel for Respondents.

THOMAS F. SHERIDAN,
WILLIAM STEELL JACKSON,
Of Counsel.

CHICAGO, September 30, 1925.